HORIZONTAL TECHNOLOGIES

Providing Innovative Solutions to Subsurface Environmental Challenges

November 6, 1997



Ms. Barbara A. Magel Karagania & White Ltd. 414 North Orleans, Suite 810 Chicago, IL 60610

Re:

American Chemical Site

Griffith, Indiana

Dear Ms. Magel:

We certainly appreciate you inviting us to meet with you on Tuesday, November 11th, at 10:30 AM at the law firm of Clifton Lake (McBride, Baker & Coles), 500 West Madison Street, 40th Floor, Chicago, in order to try to resolve final billing differences on the ACS site.

The purpose of this letter and the attachments is to explain the barrier wall story at the ACS site. We have finished the job with the exception of submitting final Foster Wheeler Certification Report and ironing out a few points with Montgomery Watson. The wall was substantially complete on June 6th and closed completely on July 11th. We appreciate the opportunity to install our innovative system for you; you have in place around the ACS site the best barrier wall system in the United States.

Our disagreements with Montgomery Watson generally revolve around one major issue: the information supplied by Montgomery Watson regarding the site in contrast to actual site conditions. According to Montgomery Watson, the barrier wall was to surround the waste and not go through it. According to Montgomery Watson, with the exception of the southwest corner, the soil through which our trenching activities were to be conducted, was free of refuse, barrels and waste and free of large rocks and boulders. These representations were all wrong, and HTI incurred substantial costs in dealing with the waste, refuse and other obstructions it encountered. If we had had notice of these subsurface conditions at the time we bid the job, our price would have been substantially higher. Had Montgomery Watson told us, prior to contract formation, that we were buying the risk of all subsurface obstructions, our price would have been substantially higher. Now, having completed the work successfully, we are asking to be reimbursed for the extra costs we incurred.

Page 2 November 6, 1997 Ms. Barbara A. Magel

HTT's current contract amount, with approved change orders through November 1, 1997, is \$1,614,336.72. The last payment we received was \$50,000 on August 25, 1997; we have received total payments of \$1,208,111.13, leaving a balance due on the contract of \$406,225.59. In addition, we are requesting a contract adjustment in the amount of \$1,160,247.02. Thus, we seek final payment of \$1,566,472.61, which includes the contract balance and the requested contract time adjustment.

Thank you for your consideration.

Sincerel

Donald R. Justice

President

jm

Attach.

HORIZONTAL TECHNOLOGIES' REQUEST FOR CONTRACT ADJUSTMENT

Horizontal Technologies, Inc. ("HTI") requests that its contract with Montgomery Watson Constructors, Inc. ("MWCI") be amended to increase the amount of the contract by \$1,160,247.02 and to extend the time for performance by 154 days. The request is based on the following specific items.

A. ADDITIONAL REFUSE REMOVAL. The contract between MWCI and HTI indicated that a limited amount of municipal waste could be anticipated on the southwest corner of the barrier wall alignment. (See: Section 4.3 of the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Investigation Report; see also questions 7 and 8 of the minutes of the pre-bid meeting of April 26, 1996; both of which are incorporated in the contract by paragraph 2 of the subcontract agreement and sections 1.0 and 1.5 of the Request for Bids.) MWCI, in its letter of November 6, 1996, issued after the contract was executed, estimated the total amount of refuse to be relocated to be approximately 400 cubic yards and the total amount of spoils to be relocated to the upper aquifer spoils management area to be less than 4,000 cubic yards. (See Exhibit 1 hereto.)

In fact, HTI, at the direction of MWCI, relocated more than 10,000 cubic yards of refuse and over 14,000 cubic yards of spoils in total. HTI relocated more than twenty five times as much as MWCI initially indicated would need to be moved. HTI has requested a contract extension of 35 days for this work and payment of \$316,706.82. MWCI has refused to acknowledge any obligation to pay HTI for this additional work.

The Request for Bid prepared by MWCI incorporated the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Report. (Request for Bid, paragraph 1.5.) Section 4.3 of the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Report indicated that refuse at the site could be expected at borings 201 through 210. No estimate of the volume of refuse was given, however the report indicated (section 1.1) that it was intended "to determine the lateral extent of the waste materials at the locations where the barrier wall alignment is proposed." The Report also purports to "provide sufficient information regarding site conditions" to allow barrier wall subcontractors to prepare informed bids and estimate

the quantities that needed to be moved. Pursuant to the contract (paragraph 3) between HTI and MWCI, HTI was entitled to rely upon the plans, specifications and other documents provided by MWCI. (Note that this provision was changed from the printed version of the contract.) Accordingly, the contract price was based upon the costs to remove and relocate a limited quantity of refuse from the southwest area.

At the pre-bid meeting conducted by MWCI on April 23, 1996, one of the questions asked was whether contractors should expect to encounter buried drums during construction of the barrier wall. MWCI's answer states that the wall is intended to remain outside the limits of the waste, unless otherwise noted. (See question 7 of the minutes of the pre-bid meeting of April 26, 1996, attached as Exhibit 2.) The next question (question 8) at the pre-bid meeting asked whether the discovery of such waste would constitute a changed condition. In response, MWCI instructed bidders to detail in their bids, the conditions which "would inhibit their ability to construct the wall and therefore necessitate a changed condition." HTI did so in its Preliminary Project Approach and specifically noted that additional work would be required in areas where waste was located. The Request For Bid prepared by MWCI indicates that questions that are answered in formal writings are binding. Accordingly, HTI is entitled to rely upon the information contained in the Minutes of the pre-bid meeting prepared by MWCI.

HTI first encountered significant amounts of refuse at approximately barrier wall station 18+50 in November of 1996. HTI sought instructions from MWCI and was told initially to stop work on refuse removal until a change order could be worked out. Later, HTI was directed to proceeded with the refuse removal. (See MWCI letter dated February 5, 1997; attached herewith as Exhibit 3.) HTI worked diligently to remove and relocate all refuse it encountered so as not to delay the progress of the job. In clean soil, HTI's trenching operations were straightforward. A front end loader or excavator removed soil to provide a working platform for the HTI trenching machine. removed for that purpose was placed adjacent to the work platform. Upon completion of the trenching and wall installation, the removed soil was placed back in the bench. However, where refuse was encountered, the soils and refuse had to be loaded into a truck and transported to the upper aquifer spoils management area where it was subsequently dumped. After it was dumped near the site of the upper aquifer spoils management area, the refuse had to then be pushed with a bulldozer into the management area. These procedures were directed by MWCI in its spoils management plan. (The spoils management plan was not developed until after execution of the contract by HTI.) It should be clear that the removal of waste by HTI entailed the use

of additional equipment and manpower and necessarily increased the time needed to accomplish the work.

DAMAGES: Since the refuse/waste could not, for the most part, be used to backfill the working platform, HTI was required to purchase fill material from a local source. A total of approximately 11,500 cubic yards of backfill was purchased at a cost of \$47,700.00 (which includes transportation to the site, but does not include cost for placement onto the working platform.) In addition, HTI was allowed to borrow a limited amount of soil from other areas of the site. MWCI allowed HTI to place a limited amount of refuse back onto the working platform (on the inside of the wall). Otherwise, every yard of refuse removed from the working platform area had to be trucked to the upper aquifer spoils management area. The additional costs of labor and equipment are \$61,656.54. Total damages are \$316,706.82. The costs incurred by HTI are documented in HTI's letter to MWCI dated July 28, 1997 (attached as Exhibit 4) and in Exhibit 5.

CONCLUSION

HTI is entitled to payment for the additional costs it incurred in removing 10,000 cubic yards of waste from the site. MWCI and/or the Committee had the ability to study the site and determine the characteristics of the surface and subsurface. It presumably did so and provided HTI and the other bidders with information which it ostensibly deemed to be accurate and reliable. HTI relied on that information in setting its price for the contract. In fact, HTI was required to remove and replace almost 10,000 cubic yards of waste and refuse: This constitutes a cardinal change for which HTI is entitled to be compensated.

B. COBBLES AND BOULDERS. The contract between HTI and MWCI provided that the soil would not contain particles larger than gravel size (approximately 2.5 inches). See the soil borings included in the Barrier Wall Alignment Investigation Report, included in the contract. In addition, the characterizations made by the Indiana Geological Survey, concluded that particle sizes would not exceed gravel size. In fact, HTI encountered a substantial quantity of cobbles (between 2.5 and 10 inches in size) and boulders (as large as 25 inches in size).

In soil without any large rocks, HTI's trenching machine could excavate a trench and install polywall at the rate of about two feet per minute. When cobbles and boulders

were unexpectedly encountered, the trenching machine invariably sustained damage which included broken cutters and chains and, in several instances, major damage to the polywall installation apparatus. In some instances, the machine could be repaired in place. In other situations the machine had to be relocated for repairs. Where cobbles and boulders were expected, the regular trenching machine (which excavated and installed the polywall in one step) had to be removed. A different machine and/or operation was used to pre-excavate the trench ahead of the polywall installation and install a slurry wall.

Significant quantities of cobbles and boulders were encountered in several areas. Most notably in the southeast corner of the site, the northwest portion of the barrier wall alignment and at the western railroad track crossing adjacent Colfax Avenue. As a result, HTI incurred substantial additional costs to repair the equipment and HTI was delayed by having to repair equipment and by having to switch to other, less efficient operational approaches.

The regional geological references do not report the occurrence of cobbles or boulders in the formation. It was only through personal communication with Indiana Geological Survey Geologists that we learned of the rare deposition of course sediments such as cobbles and boulders by debris flows during the retreat of the glaciers in the area.

<u>DAMAGES:</u> HTI is seeking compensation for the impact of the cobbles and boulders on the installation. As a result of their presence, extensive pre-trenching was required to complete the installation. Additionally, several Polywall closures were required to connect separate segments. HTI is requesting an additional 49 days in time extensions and \$39,115.97 for the southeast area, \$65,887.09 for the northwest area, \$126,766.39 for equipment repair, \$90,621.00 for the slurry wall/pretrenching, \$84,143.19 for the railroad track and \$64,128.00 for the closures for the southeast, northwest and railroad track areas. The costs incurred by HTI are documented in HTI's letter to MWCI dated July 28, 1997. (This letter is attached as Exhibit 4.) Total damages are \$470,661.64.

CONCLUSION

HTI could not have reasonably been expected to plan for the occurrence of the cobbles and boulders. The Indiana Geological Survey's characterization of the

regional geology does not indicate the presence of cobbles and boulders in any of the strata that HTI had to complete the installation in.

C. PPE UPGRADES. The contract between MWCI and HTI specifically indicates that the barrier wall construction would be accomplished in Level D PPE for eighty percent of the time and that Level C PPE would be utilized twenty percent of the time. HTI's proposal for constructing the extraction system was subsequently selected and resulted in the issuance of a change order for HTI for its construction. The proposal for the construction of the extraction system also stated that the pricing was based on a Level D PPE. PPE stands for Personal Protective Equipment. There are various levels of PPE; the levels at issue with this disputed change order are Level D, Modified Level D and Level C. These protection levels are defined in the MWCI Health and Safety Plan for the project, that was incorporated in the contract.

MWCI instructed HTI at the commencement of on-site activities that it deemed Modified Level D PPE to be appropriate for all field activities associated with the actual installation of the barrier wall and maintenance of equipment. This was as long as the air monitoring results did not indicate the necessity to up-grade to Level C.

MWCI, in its letters of February 11, 1997, and February 12, 1997, agreed that HTI is entitled to additional compensation with respect to the change in PPE level required. (These letters are attached as Exhibits 6 and 7.) However, no such compensation has been granted.

The action levels for upgrading from one to another level are also defined in the MWCI Health and Safety Plan. Level D is the lowest level of protection that simply stated requires the utilization of normal work clothes, including hard hat, safety boots, safety glasses and hearing protection. Modified Level D includes all of the above, but in addition requires the utilization of additional dermal protection. The dermal protection involves suiting up in polyethylene coated Tyvek, two pairs of gloves and boot covers. Level C is Modified Level D equipment including a full face air respirator.

MWCI specified in their <u>Amendment II to Site Safety Plan; Barrier Walls/Extraction System Performance Monitoring System Construction</u>, on page

five, "initial level of employee personal protection ensemble is Level D". This information was supplied to HTI as part of the pre-bid package.

HTI predicated its costing of the PPE Level for the project upon the representation made by MWCI. The resultant proposal for the change order to add the extraction system held to the same PPE Level D for consistency purposes with the contract.

The MWCI Health and Safety Plan for the site, also adopted the specified action levels associated with upgrading from a lower level of protection to a higher level of protection. Similarly, action levels for down-grading were also adopted. The necessity to upgrade to Level C is predicated upon air quality monitoring. Trigger levels However, in the case of mandate when an upgrade or downgrade is needed. differentiating between Level D and Modified Level D, the criteria is more subjective. The Chemical Hazard Evaluation/Air Monitoring Strategy section of the Health and Safety Plan lists a variety of activities to be accomplished at the site. The activity that most closely resembles the trenching activities to be undertaken by HTI is the Monitoring Well Installation/Soil Sampling/Sediment Sampling/Soil Boring section of the Plan on Page 5-8 (see Exhibit 8). The trenching activities associated with the barrier wall and extraction trench installation involves sediment removal and handling from both above and below the water table. The Monitoring Well Installation/Soil Sampling/Sediment Sampling/Soil Boring section specifies, "that Level D health and safety protection has been used in past activities and is anticipated to be applicable for these tasks, since this work is performed outside the limits of waste. For soil borings advanced near the waste area on-site and off-site, Level D-Modified has been applicable in past investigations."

The stated purpose of the barrier wall by MWCI is for the alignment to remain outside of the limits of waste. (See: Section 4.1 of the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Investigation Report; see also questions 7 and 8 of the minutes of the pre-bid meeting of April 26, 1996 *Exhibit 2*.)

<u>DAMAGES</u>: The PPE level up-grades to Modified Level D and Level C, has a recognized impact on production and incurs additional cost for the equipment requirements. The impact on production is most notable related to the time required for the personnel to suit-up in the mornings and after the lunch break, and for the dress-out and decontamination process at the end of the day and before lunch. This equates to approximately one hour per day per employee and one hour of standby time

for the equipment. The total damages related to this issue are \$159,428.83 for the barrier wall construction and \$43,384.70 for the extraction trenches. The total delay time associated with the PPE upgrades is seventeen days, for which HTI is due compensation in the form of a time extension. The costs incurred by HTI are documented in HTI's letter to MWCI dated July 28, 1997. (This letter is attached as Exhibit 4.)

CONCLUSION

HTI is entitled to payment for the additional costs associated with upgrades above Level D, except for twenty percent of the time associated with the installation of the barrier wall under Level C conditions pursuant to the contract. MWCI and/or the Committee which had the ability to study the site and determined that 1.) the barrier wall alignment was located outside of the limits of waste, and 2.) appropriate PPE level of protection located outside the waste was Level D. Predicated upon this information and representations made by MWCI to HTI, HTI was justified in qualifying all but twenty percent of the barrier wall construction as Level D PPE. HTI is due compensation for the PPE up-grades beyond those agreed to in the contract.

D. UNION INTERFERENCE. The contract between HTI and MWCI allowed HTI to use either union or non-union labor at the job site. (See question 21 of the minutes of the pre-bid meeting of April 26, 1996 *Exhibit 2*.) Following consultation with MWCI prior to commencement of the work, HTI chose to use non-union labor to operate equipment and provide labor on site. MWCI promised to support HTI in the event of any labor disturbance. Local 150 of the International Brotherhood of Operating Engineers then began picketing the site and preventing necessary supplies from reaching HTI. Picketers threatened HTI employees and vandalized their vehicles as well as suppliers' vehicles.

In order to attempt to keep the work moving ahead on schedule, HTI was prepared to seek a judicial solution to the problem, at its own expense. MWCI, however, urged HTI not to do so and promised, instead, to solve the problem itself. MWCI initially set up a two-gate system, but that did not assist HTI, since the picketers simply went to HTI's gate and continued to harass HTI employees, subcontractors and suppliers. MWCI then urged HTI to seek a negotiated solution but continued to promise that it, rather than HTI, would go to court to seek a solution to the labor problem. MWCI never did so.

Ultimately, MWCI prevailed upon HTI to unionize its employees and agreed to pay HTI a sum representing the difference between the union wages and the non-union wages (\$40,000.00).

In the change order (number 5) the parties explicitly agreed to reserve for later decision the compensation due HTI for the delay imposed upon it by the union disturbance. (See Change Order 5, attached as Exhibit 9).

DAMAGES: HTI seeks a time extension of 47 days and payment of \$91,481.78 for compensation of the additional costs imposed by MWCI's failure to act in a timely manner. The costs are summarized in Exhibit 4.

CONCLUSION

MWCI failed to follow through on their commitments and act in a timely manner, to minimize damages to HTI as represented. Therefore, HTI is due compensation for the monetary and delay damages incurred in this force majeur event. This was clearly a problem that could have been prevented. It was recognized as a potential problem from the beginning by MWCI, however was essentially ignored in order to minimize costs to the Committee.

E. Buried Drums in Barrier Wall Alignment at Station 34+90. HTI contracted with MWCI to install the barrier wall along the alignment identified by MWCI. Buried drums were encountered in the alignment by HTI on April 10, 1997, during the slurry wall/pre-trenching installation. These drums were ultimately determined to fall within the "waste" classification criteria. This area was skipped over to avoid the drums. Approximately one day of HTI's production was lost since the trencher had to be removed from the ground and relocated approximately 100 feet on the other side of the drums for this changed condition. This occurred at additional cost to HTI and delayed the progress of the installation of the barrier wall.

The buried drum field was first encountered by Young's Environmental, Inc. while installing utilities in this area on January 17, 1997. Therefore, MWCI had sufficient time to anticipate and resolve the conflict, however they failed to act in a timely manner.

Review of historical aerial photographs of the site from May 26, 1970, clearly show a large burial area that covers approximately 60,000 square feet. This burial area is totally outside and north of the original barrier wall alignment called for in the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Report. The revised second alignment, which was under construction at the time the drums were encountered with the trencher, ran directly into the burial area. It was ultimately encompassed within the third and final constructed wall alignment.

DAMAGES: HTI is requesting one additional day in time extension and \$4,217.86 in related costs. The cost breakdown for this item is included in Exhibit 4.

CONCLUSION

HTI is due compensation for this matter since it was clearly beyond HTI's control. Had an adequate evaluation of the barrier wall alignment been accomplished by Montgomery Watson and MWCI, HTI would not have been delayed. Furthermore, if MWCI had acted in a timely manner from the time it first knew of the drum field, this issue could have also been avoided.

F. Northern Barrier Wall Alignment Change. HTI contracted with MWCI to install the barrier wall along the alignment identified by MWCI. During the installation, buried drums were encountered in the alignment. These drums were found to fall within the "waste" classification. As a result of the discovery of additional buried drums that were found in the second northern alignment for the barrier wall, it was decided by MWCI to relocate the barrier wall to the north. HTI was forced to suspend operations while the alignment modifications were decided upon by MWCI, approved by the ACS Committee and the regulatory agencies involved. HTI was not able to proceed with the installation from May 9, 1997, through, May 14, 1997.

This was not the first time that the barrier wall alignment was changed. The first time the northern alignment was changed, it was relocated because the original alignment reported in the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Report had the barrier wall running through the operational ACS plant. HTI was given a change order prior to the start of construction, to realign the barrier wall to the north of the ACS plant facility.

HTI was ultimately given a change order for the second realignment on September 18, 1997, approximately three months after the completion of the wall (attached as Exhibit 10). However, this change order <u>did not compensate</u> HTI for the stand-by time incurred for the period May 9, 1997, through May 14, 1997, or a time extension to the contract.

Review of historical aerial photographs of the site from May 26, 1970, clearly show a large burial area that covers approximately 60,000 square feet. This burial area is totally outside and north of the original barrier wall alignment called for in the Montgomery Watson Technical Memorandum, Dewatering/Barrier Wall Alignment Report. The revised second alignment, which was under construction at the time the drums were encountered with the trencher, ran directly into the burial area. It was ultimately encompassed within the third and final constructed wall alignment.

The buried drum field was first encountered by Young's Environmental, Inc. while installing utilities in this area on January 17, 1997. The buried drums were first encountered by HTI at station 34+90 in the pre-trenching activities associated with the slurry wall installation on April 10, 1997. (See: June 20, 1997 MW letter to EPA, attached herein as Exhibit 11.) Therefore, MWCI had sufficient time to anticipate and resolve conflict, however they failed to act in a timely manner.

<u>DAMAGES:</u> HTI seeks a time extension of 5 days and standby costs of \$40,571.79 for the delay. The cost breakdown for this item is included in Exhibit 4.

CONCLUSION

As in E above, HTI is clearly due compensation for this matter since it was clearly beyond HTI's control. Had an adequate evaluation of the barrier wall alignment been accomplished by Montgomery Watson and MWCI, HTI would not have been delayed. Furthermore, if MWCI had acted in a timely manner from the time they first knew of the drum field, this issue could have also been avoided.

Table of Contents

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MONTGOMERY WATSON

November 6, 1996

Ms. Sheri Bianchin, RPM Mail Code SR-J6 U.S. EPA, Region V 77 West Jackson Blvd. Chicago, IL 60604-3590

Re: Management and Temporary Storage of Construction Derived Spoils PGCS/Barrier Wall Construction Activities ACS NPL Site

Dear Ms. Bianchin:

During the next few months, a number of excavations will be made at the American Chemical Service (ACS) NPL Site, as the Perimeter Groundwater Containment System (PGCS) and the Barrier Wall and Extraction System (BWES) are constructed. Approximately 4,000 cubic yards of construction spoils will be generated during the construction. The contaminant characteristics of the spoils will be consistent with the contaminated soils that are found at the site. Given the design/build format of this project, it will be reasonable to relocate excess spoils from construction areas to other areas of similar characteristics within the site. This Spoils Management Plan was developed to facilitate the management of construction generated spoils while minimizing the potential of increasing the total amount of waste material in each AOC.

Areas of Contamination (AOCs)

Figure 1 is a copy of the map developed by U.S. EPA to identify the Areas of Contamination (AOCs) at the American Chemical Service NPL Site. The map, based on previous investigations and sampling at the site, shows areas of buried waste and areas of groundwater contamination. Two waste types are identified in the Record of Decision (ROD) and these are identified on the U.S. EPA map: 1) areas where there are subsurface soils containing PCB concentrations above 10 parts per million (ppm) and 2) areas where there are buried wastes with VOC concentrations greater than 10,000 ppm. These AOCs are identified on the basemap with distinctive shading patterns (Figure 1). In several areas the two waste types overlap.

The outer extent of groundwater contamination in the upper aquifer was mapped by field screening methods in February 1996 and confirmed by monitoring well samples collected in July 1996. The outer limit of detected VOC contamination is indicated on Figure 1. On the

2100 Corporate Drive Addison, Illinois 60101 Tel: 630 691 5000 Fax: 630 691 5133

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basis of the monitoring wells located away from the center, and from the locations of the buried waste in conjunction with the groundwater flow patterns in the upper aquifer, it can be inferred that there is an area of elevated dissolved phase VOC contamination in the upper aquifer. The highest concentrations of groundwater contamination exist between the two primary AOC groups. The dashed line added to Figure 1 shows the area where it is inferred that there are elevated concentrations of dissolved phase total VOCs in the groundwater.

A field screening investigation conducted in February 1996 provided an indication of the outer extent of groundwater contamination in the upper aquifer at the site. The outer line on Figure 1 shows the outer extent of VOC contamination in the groundwater, first inferred from the field screening and subsequently confirmed by upper aquifer monitoring wells.

Planned Construction Activities

Seven excavation activities will be conducted during the construction of Perimeter Groundwater Containment System (PGCS) and the Barrier Wall and Extraction System (BWES) during the next three months. These include:

- 1. Single pass excavation to install the 4,000 foot barrier wall.
- 2. Air supply and influent piping for BWES extraction trenches
- 3. Extraction trenches inside the BWES
- 4. Excavating a trench for the water line
- 5. Excavations to install piping for ACS's storm water system
- 6. Excavation to install the natural gas utility line
- 7. Excavating PGCS groundwater extraction trench

Figure 2 shows the areas of excavation activity overlaid on the U.S. EPA map delineating the AOCs as defined by U.S. EPA in October 1996:

- Areas with subsurface soil with PCB concentrations greater than 10 ppm
- Areas of buried waste with VOC concentrations greater than 10,000 ppm
- Dissolved phase groundwater contamination
- Fire Pond Surface Water/Storm Water Impoundment

The majority of the spoils will be generated by the excavation of the PGCS extraction trenches, the BWES extraction trenches, and the construction of the barrier wall. Most of the spoils generated by these activities will have relatively low concentrations of contamination because most of the excavation areas are outside the areas of buried waste. However, there are several areas along the barrier wall that may cross AOCs with PCBs >10 ppm and VOCs > 10,000 ppm. In addition, surficial soils along parts of the alignment for the PGCS extraction trench west and north of the ACS facility may contain PCB concentrations above 10 ppm.

Spoils Management Areas

Sheri Bianchin

November 6, 1996

U.S. EPA

Three spoils management areas are planned in the off-site area:

- Area for Spoils Containing PCBs > 10 ppm
- Area for Spoils Containing VOCs >10,000 ppm and PCBs > 10 ppm
- Area for Upper Aquifer Soils Containing Groundwater with VOCs < 100 ppm.

The areas are shown in an overlay on Figure 3. These locations were selected so that spoils will be stored within AOCs with similar remediation requirements and to minimize interference with the five test pits planned for the Low Temperature Thermal Treatment and Materials Handling Treatability Studies. The waste types indicated on the basemap will provide preliminary indication of where excess spoils will be managed. As indicated above, the spoils may have low levels of VOC contamination because they will have been excavated from below the water table inside the groundwater plume area. An Hnu or PID will be used as the secondary indication of waste type for management. If a direct reading of the Hnu on the spoils indicates VOC concentrations greater than 500 ppm, the spoils will be managed as a buried VOC waste.

PCB Containing Spoils Management Area

Approximately 50 cubic yards of spoils containing PCBs will be generated when the barrier wall is constructed along the southern end of the barrier wall. The PCB spoils management and storage area is shown on Figure 3. The existing cover in this area will be scraped back to a depth of two feet, the spoils will be placed in contact with the other PCB containing wastes and then the cover material that was removed will be used to re-cover the PCB area. The wastes in this area will be easily identified in the field because they consist of buried refuse and debris, which is distinct from the existing cover material.

The PGCS extraction trench has been aligned along the edge of the wetland, west and north of the ACS facility. Several sediment samples collected during the wetland investigation indicated that PCB concentrations in some of the surface soils and sediments along the trench alignment may contain PCB concentrations above 10 ppm. Samples of soil/sediment along the trench alignment will be collected at intervals no greater than 100 feet and analyzed for total PCB concentrations using the Omicron field screening method that was previously used during the barrier wall alignment investigation. See the attached "Sampling and Field Screening for Total PCBs" Plan for further details.

If the field screening indicates the potential that PCB concentrations are greater than 10 ppm, in a segment of the trench alignment, a sample of the material exceeding 10 ppm will be sent to the laboratory for confirmatory analysis. If PCB concentrations are confirmed to be above 10 ppm in the upper two feet along some section of the extraction trench alignment, those surficial soils will be excavated and stockpiled in an area adjacent to the trench and covered with two feet of site soil.

PCB and VOC Containing Spoils Management Area

Sheri Bianchin

November 6, 1996

U.S. EPA

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Approximately one cubic yard of waste material will be generated by the abandonment procedure for the six ACS production wells. These wells are all located within the ACS facility, but outside the buried waste AOCs. The wells will be abandoned by injection of grout along the annular space outside the casing. The primary evidence of successful abandonment will be the return of grout above the sealed zone. Several hundred gallons of excess grout will be generated by the abandonment process. This excess grout will placed in the PCB and VOC Spoils Area.

The PCB and VOC Spoils Management Area is shown on Figure 3. The existing cover in this area will be scraped back to a depth of two feet, the spoils will be placed in contact with the other PCB containing wastes, and then the removed cover material will be used to re-cover the PCB area. The cover material is distinct from the underlying waste material, so there will be no difficulty in segregating it in the field.

Upper Aquifer Spoils Management Area

Excavations that are completed outside the AOCs with elevated PCBs and/or elevated VOCs, will nonetheless be excavated through the upper aquifer that is contaminated with dissolved phase VOCs, in detectable concentrations. An estimated 3,950 cubic yards of spoils will be generated by the following construction activities.

Barrier Wall Construction	900	cubic yards
Water Line	410	cubic yards
Natural Gas Line	60	cubic yards
PGCS Groundwater Extraction Trench	930	cubic yards
BWES Extraction Trenches	1,000	cubic yards
ACS Storm Water System	250	cubic yards
Municipal Refuse	400	cubic yards

The upper Aquifer Spoils Management Area is located in the area where the water table is closest to the ground surface and contains elevated levels of dissolved phase organics. The ground surface in this area is between 635 and 636 feet above mean sea level (amsl). The water table elevation is generally located at an elevation of 634 to 635 feet amsl in this area. Therefore, placement of upper aquifer spoils will not create any significant volume of newly contaminated soils to be remediated.

This area will be prepared by first clearing and grubbing an area approximately 300 feet wide and 300 feet long. Spoils generally consisting of upper aquifer sand will be placed in this area to a depth of three to five feet. Approximately 400 cubic yards of spoils from the southwestern alignment of the barrier wall will contain some municipal type refuse (wood, paper, plastic, and metal). This material will be regregated in one area of the management

Sheri Bianchin

November 6, 1996

U.S. EPA

area. Upon completion of the construction activities, a one-foot layer of clean site soil will be placed on top of the spoils as cover.

We believe that this plan to manage construction derived spoils is in accordance with your concerns about the site, on the basis of several conversations we have had with you in the past several weeks. We are planning to begin the excavations described herein on Monday, November 11, 1996. We would appreciate your approval of this spoils management plan as much in advance of that date as possible. Please call me if I can provide additional information to aid in your review.

Sincerely,

MONTGOMERY WATSON INC.

Peter J. Vagt, Ph.D., CPG

Vice President

Enclosures: Figure 1. U.S. EPA Map of Areas of Contamination (AOCs) at the ACS NPL

Site (October 1996).

Figure 2. Construction Areas at the ACS NPL Site

Figure 3. Spoils Management Areas at the ACS NPL Site

PGCS Extraction Trench PCB Sampling Plan

cc: H. Grejda, IDEM
S. Mrkvika, B&V WS
ACS Technical Committee

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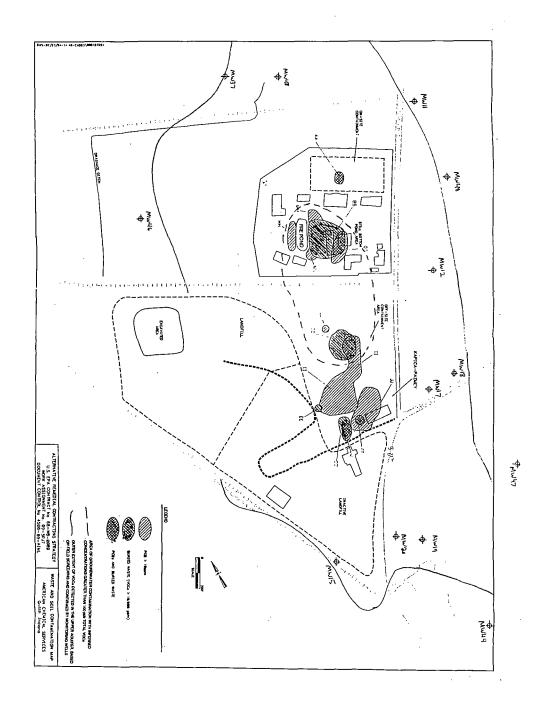
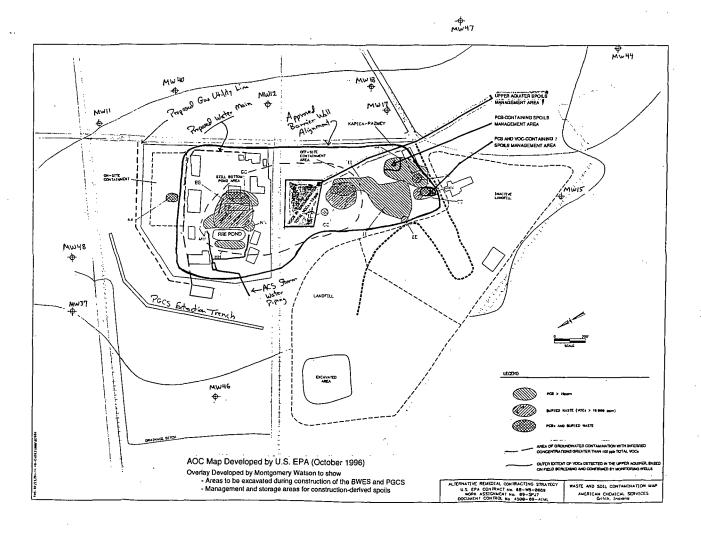
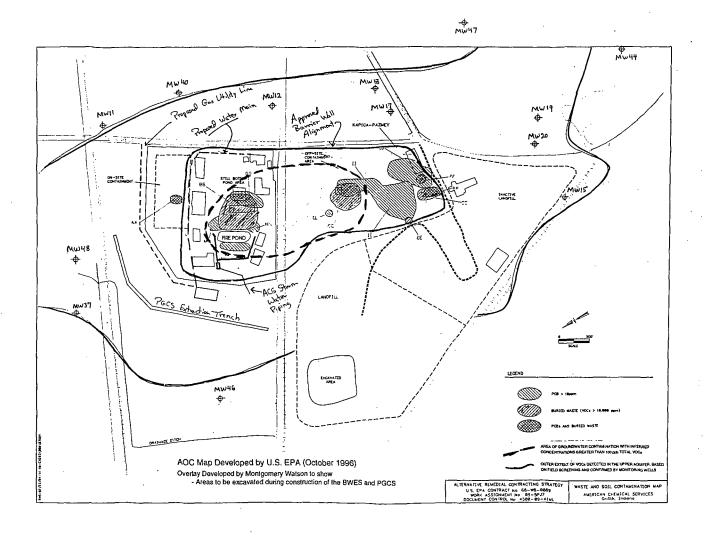
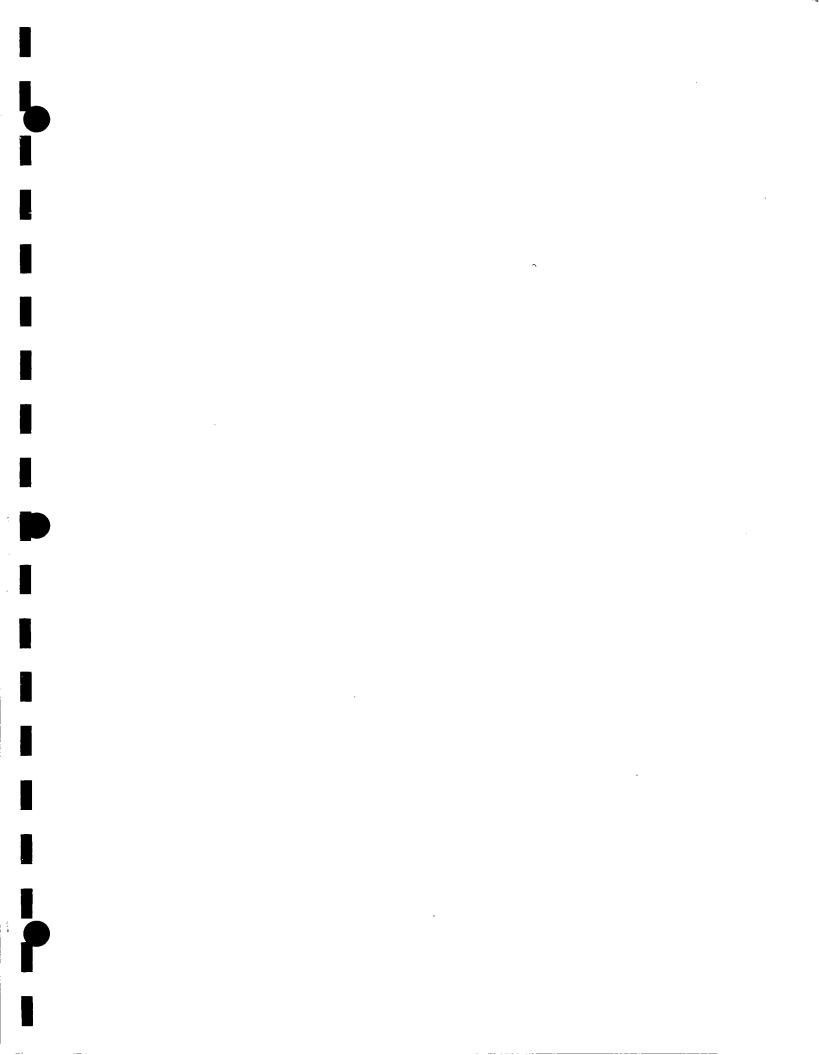


FIGURE 1. U.S. EPA MAP OF AREAS OF CONTAMINATION (AOCs) AT ACS NPL SITE







BARRIER WALL PRE-BID MEETING MINUTES AMERICAN CHEMICAL SERVICES, INC. SITE GRIFFITH, INDIANA

These minutes document the barrier wall pre-bid meeting conducted at the American Chemical Services, Inc. (ACS) site in Griffith, Indiana on Tuesday, April 23, 1996. Included in these minutes are questions raised and issues discussed during the meeting as well as Montgomery Watson Constructor Inc.'s (MWCI's) responses.

MEETING SUMMARY

The meeting began with Todd Lewis of MWCI providing a brief introduction and project overview. The project overview included: review of the barrier wall alignment; identification of the four utility crossings that will be the responsibility of the successful bidder; and discussion of the project schedule. The four utility crossings identified as being the responsibility of the successful bidder included the water line, the gas line, and the sanitary sewer line (two crossings). Following the project overview, Todd Lewis led the bidders on a walkover of the entire barrier wall alignment. During this walkover, Todd identified points of special interest including: utility crossings, railroad crossings, and the area in which the new water treatment facility will be constructed. The meeting concluded with a question and answer session back in MWCI's site trailer. Questions raised and issues discussed during the meeting are detailed below.

QUESTIONS/RESPONSES:

Question #1: Can MWCI provide the size and depth of those utilities that will be the

responsibility of the successful bidder?

Response: MWCI will investigate this question and address in an addendum.

Question #2: With respect to those utilities that will be the responsibility of the successful

bidder, can these services be interrupted?

Response: The gas and the water service may be interrupted. Bidders shall identify in

their proposals how long they expect to disrupt these services. The sanitary sewer service may not be interrupted. The successful bidder must make

arrangements for the sanitary sewer to remain in service.

Question #3: Other than the four utility crossings specifically mentioned, will

disconnection and reconnection of other utilities be handled by others?

Response: Yes, other than the four utility crossings specifically mentioned, other utility

crossings or removals will be handled by others.

Question #4: Can the barrier wall alignment be moved north of the ACS plant?

Response: Contractor may propose moving the wall north of the ACS production plant

as an alternate. However; bidders proposal must bid the wall as shown.

Question #5: Can waste encountered during construction of the barrier wall in the "off-site

area" be disposed of in this area?

Response: Solid waste encountered during construction of the barrier wall in the "off-

site area" may be disposed of at a central location within the barrier wall in this area. Liquid waste may not be disposed of in this area without proper containment or approval from MWCI. Bidders shall include in their

proposal, a plan to deal with liquid waste if it is to be generated.

Question #6: Will the successful bidder be required to restore the surface of the barrier

wall to existing grade?

Response: The successful bidder shall re-establish the existing surface water drainage

patterns. See revised response in Addendum No. 1.

Question #7: Should bidders expect to encounter buried drums during construction of the

barrier wall?

Response: Except where specifically noted in the Barrier Wall Alignment Report, the

barrier wall alignment is intended to remain outside the limits of waste, as

defined in the alignment report.

Question #8: If waste is encountered during construction of the barrier wall, will this

constitute a changed condition? -

Response: While every effort has been made to align the barrier wall outside the limits

of the waste, MWCI can not guarantee that waste or refuse will not be encountered during construction. Bidders shall include in their proposal a description of conditions that, if encountered, would inhibit their ability to

construct the wall and therefore necessitate a changed condition.

Question #9: Who is responsible for supporting the railroad tracks above the barrier wall?

Response: Successful bidder will be required to complete the barrier wall to grade.

Bidder shall include in their proposal what, if any, load restrictions will be required on the barrier wall surface for the bidders warranty to remain valid.

The design of surface support, if required, will be completed by others.

Question #10: Who is funding the project?

Response: The project is being funded by a PRP group of which ACS is a member.

Question #11: Is the project receiving Federal funding?

Response: The project is not receiving Federal funding.

Question #12: What permits will be required from the successful bidder?

Response: MWCI will investigate this question and address in an addendum.

Question #13: Can bidders be provided with a copy of MWCI's contract?

Response: MWCI will provide a copy of MWCI's contract in an addendum.

Question #14: How can we obtain additional bid documents?

Response: MWCI will investigate this question and address in an addendum.

Question #15: Do the liquidated damages specified in the RFB apply to each performance

milestone or just project completion?

Response: The liquidated damages apply only to the substantial completion and

construction completion deadlines.

Question #16: If the regulatory review takes longer than expected, will the schedule be

adjusted?

Response: With prior written consent from MWCI, the construction schedule can be

delayed due to currently unanticipated minor delays in design reviews and approvals by others. However, construction must be substantially completed no later than stated in the contract schedule or the bidder may be subject to

liquidated damages. See revised response in Addendum No. 1.

Question #17: Can you explain the reference to the "pre-work excavation to the clay layer"

as called for in the specifications?

Response: MWCI will investigate this question and address in an addendum.

Question #18: Can you provide information on possible vertical gradients from the lower

aquifer up into the shallow aquifer?

Response: MWCI will investigate this question and address in an addendum.

Question #19: Is MWCI considering capping any or all of the area within the barrier wall.

Response: Portions of the area within the wall may be capped in the future.

Ouestion #20: What are the allowable work hours?

Response: Allowable work hours are Monday through Friday from 7:00 A.M. to 5:30

P.M. . Weekend work is not anticipated. See revised response in

Addendum No. 1.

Question #21: Is this a union or non-union project?

Response: The successful bidder may employ either union and/or non-union labor. The

ACS plant employs union labor.

Question #22: Can the alignment drawings be made available to the successful bidder for

use in completing As-Built drawings?

Response: The barrier wall alignment drawings will be made available to the successful

bidder on Intergraph.

Question #23: Is MWCI offering a bonus for early completion?

Response: MWCI is not offering a bonus for early completion.

Question #24: Is there a date before which construction can not be completed?

ACS #042996.1500.CS

May 1996

Pre-Bid Mtg. Minutes

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February 5, 1997

Mr. Greg Rawl Horizontal Technologies, Inc. 4767 Pine Island Rd., NW Matlacha, FL 33993

Subject: Refuse Removal - ACS site

Dear Mr. Rawl,

This letter is in response to your letter dated 2/5/97 regarding refuse removal along the barrier wall alignment. HTI has indicated that refuse removal work is being delayed pending a response to HTI's request for additional funds or possibly the work being done by others. I can ,at this time, state that MWCI or its subcontractors will not be removing the refuse in question.

I would also like to clarify the direction that MWCI has given to HTI regarding removal of these materials. MWCI did not direct HTI to specifically stop refuse removal activities, but did request HTI stop performing non-approved work that it feels additional costs would be due to HTI. The request to stop the disputed work was done to define the extent and scope of work that would be the bases of HTI's claim for additional funds, as this work was proceeding without authorization at that time. At this time, MWCI has received HTI's specific request for additional funds, defining extent and scope of work and has no objection to HTI proceeding with refuse removal. However, please be advised that MWCI is considering HTI's request for additional funds and approval of the request may not be granted.

Sincerely

MONTGOMERY WATSON CONSTRUCTORS, INC.

Todd Lewis

Construction Manager

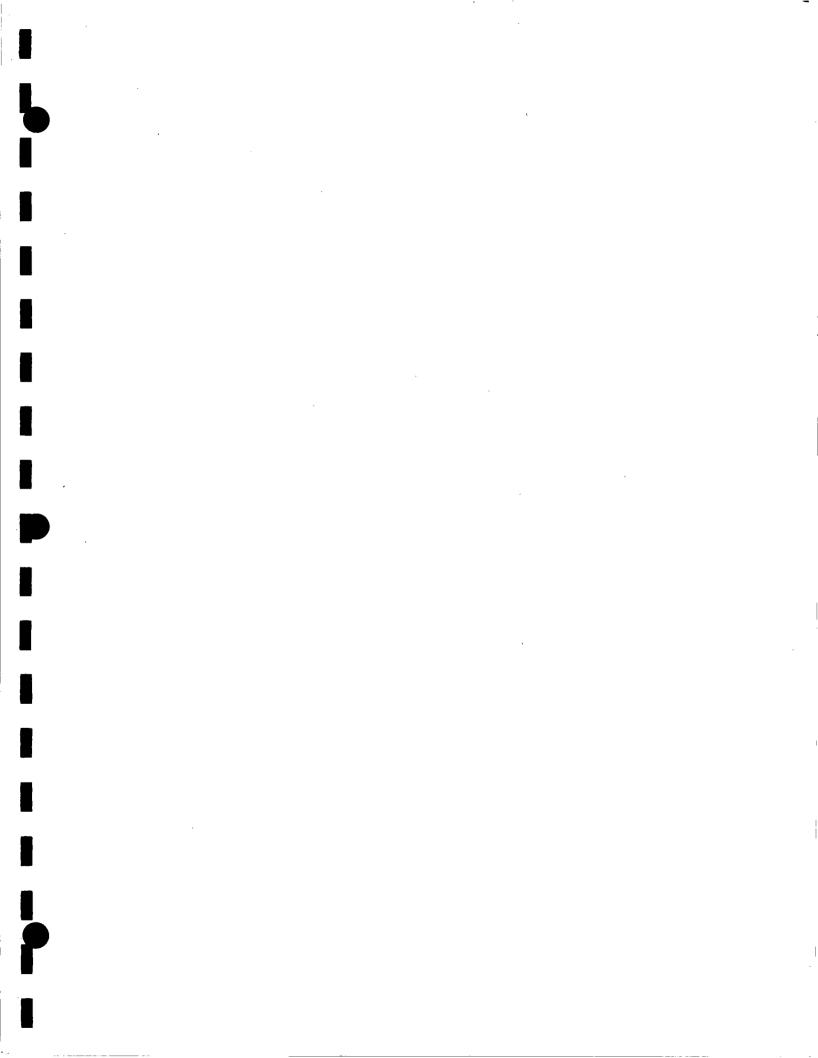
cc: Joe Willich

Joe Adams

Ben McGeachy

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Providing Innovative Solutions to Subsurface Environmental Challenges

July 28, 1997

Mr. Todd A. Lewis Sr. Construction Management Engineer Montgomery Watson Constructors, Inc. 2100 Corporate Dr. Addison, Illinois 60101

Re: Request for Change Orders

American Chemical Services, Inc. NPL Site

Dear Mr. Lewis,

The purpose of this letter is to provide you with a summary and additional documentation of the numerous change order request that we have outstanding. Some of these go back as far as the Force Majeure occurrences at the beginning of the project running through the construction of the project.

Changed Conditions Related to Additional Refuse Removal CO# 400-001, 400-001b and 400-005

The impacts of the additional refuse present in the off-site portion of the project have been discussed in numerous letters and meetings. The additional refuse issue is broken down into on-site and off-site refuse. The issue is simple; that is, the vast majority of the refuse we encountered while installing both the extraction wells and the barrier wall was unknown to all involved prior to the start of our excavation activities. Furthermore, the refuse at issue here is almost entirely related to the municipal refuse encountered in the off-site area. This municipal refuse is obviously related to the presence of the adjacent sanitary landfill. However, the handling of the municipal refuse complicated because it was intermixed with VOC wastes, both in the soils and groundwater as well as in intact and partially intact drums.

When HTI prepared its proposal and subsequent pricing, the only characterization work that had been accomplished at the ACS site was done by Montgomery Watson (MW) and other previous

Page 2 July 28, 1997 Mr. Todd A. Lewis

consultants. No documentation was provided prior to the bid or even prior to the design which indicated significant quantities of refuse existed at the site. In fact, as recently as, November 6, 1996, Montgomery Watson indicated in a letter from Peter J. Vagt, Ph.D., CPG, to Sheri Bianchin, RPM of the U.S. EPA, that MW anticipated only a total of 400 cubic yards of municipal refuse. It should be noted that this was after the design of the project was essentially completed and that refuse was acknowledged to exist between barrier wall stations 16+50 and 12+30 in the plans prepared by Foster Wheeler. We estimate that a minimum of 10,000 cubic yards of material was relocated to the upper aquifer spoils management area from refuse excavated from the site construction activities.

HTI predicated the pricing of the installation upon the known information at the time of the bidding. The design also relied heavily upon the site characterization accomplished by MW. Our reliance upon the supplied information was clearly accepted by the President of MWCI when he accepted the change we requested to section "3. Examination of Site" of our subcontract with MWCI. Furthermore, the "Dewatering/Barrier Wall Alignment Investigation Report" completed by MW in March of 1996, states that field data was collected and evaluated for the investigation to accomplish the following objectives:

- 1.) "Determine the lateral extent of waste materials at the locations where the barrier wall alignment is proposed."
- 2.) "Collect soil samples for potential mix design testing of a soil-bentonite barrier wall."
- 3.) "Define the elevation of the top of the clay confining layer along the barrier wall alignment."
- 4.) "Collect soil samples for potential mix design testing of a soil-bentonite barrier wall."
- 5.) "Collect groundwater samples for potential compatibility testing of the proposed barrier wall."
- 6.) "Provide sufficient information regarding site conditions to barrier wall subcontractors intending to propose and bid on barrier wall technology and design."

It is clear from a review of the plans prepared by Foster Wheeler, that provisions for the occurrence of refuse was made for the barrier wall installation, where refuse was known to exist during the design phase of the project. Foster Wheeler did perform exploratory soil borings at the site in both the off-site and on-site area for the express purpose of further defining the depth to the underlying clay layer. It is clearly stated in the work plans that the sole purpose of these borings is to further define the depth to the top of the clay layer. This information was needed to

Page 3 July 28, 1997 Mr. Todd A. Lewis

supplement the borings that had been previously accomplished by MW in areas where the spacing between boring was significantly greater than 100 feet.

Based upon the reasons outlined above, it is HTI's position that the occurrence of the refuse at the site is clearly a changed condition. Originally MWCI indicated that they felt the refuse was a changed condition and requested pricing from HTI for the additional costs associated with the refuse removal. In a meeting on, January 23, 1997, MWCI directed HTI to stop refuse removal at the site because MWCI felt that; 1.) HTI's pricing was excessive, and 2.) MWCI wanted to investigate bringing in another contractor to accomplish the refuse relocation. On February 5, 1997, we were told to proceed with the refuse removal and that additional funds may not be granted for the additional work outside our scope of work as it pertains to refuse removal. The refuse removal had to be accomplished prior to the wall installation. Therefore, HTI continued with the refuse removal to keep the project moving and has persisted with claims for the changed condition.

The costs for the refuse related change order requests are summarized in the attached tables.

HTI is requesting an additional thirty-five days in time extensions and \$164,325.00 for off-site refuse removal, \$30,246.21 for the standby cost related to the off-site area and \$12,779.07 for the on-site refuse removal.

<u>Changed Conditions Related to Subsurface Cobbles and Boulders</u> <u>Change Order Request # 400-011, 400-012, 400-011b, 400-005, 400-021, and 400-022</u>

The site characterization prepared by MW reflected the largest particle size in both the overlying Griffith Spit sand deposits and the underlying Wadsworth Silty Clay Till Formation to be present at the site was gravel. The installation of the barrier wall encountered cobble and bolder sized rock in three separate areas of the site. The occurrence of cobbles and boulders is unheard of in the Griffith Spit sand deposit, which comprises the upper aquifer at the site according to the Indiana Geological Survey. They have indicated that cobbles and boulders in the Wadsworth Silty Clay Till is very rare, and would be present only as glacial erratics deposited by debris flows.

This information supports the fact that the occurrence of the cobbles and boulders could not have been expected at the site. In fact, it probably could not have been found by HTI, since the scope of our borings was to only tag the top of the clay unit. Trenching into the clay unit is probably the only way they could have been detected, unless a boring happened to hit a cobble or bolder. However, due to their sparse nature, the probably of hitting a cobble or bolder with a nominal four inch diameter boring is extremely low.

Page 4 July 28, 1997 Mr. Todd A. Lewis

The first encounter was in the southeast corner of the site. It was at that point the Polywall box sustained structural damage and ultimately required extensive repairs and modifications to perform satisfactorily in a cobble and bolder environment. Rock was also encountered in the northwestern portion of the site, using the smaller Polywall box and trencher. Rock was also encountered at the eastern railroad crossing adjacent Colfax Ave. Both trenchers are designed to operate in unconsolidated strata that is free of cobbles and boulders. They are capable of occasionally being able to trench through rock, as long as it does not do major damage to the cutters or chain on which the cutters are mounted.

The basis of this change order request is that HTI could not have reasonably been expected to plan for the occurrence of the cobbles and boulders. As a result of their presence extensive pretrenching was required to complete the installation. Additionally, several additional Polywall closures were required to connect separate segments. The associated costs are listed on the attached spreadsheets.

HTI is requesting an additional 49 days in time extensions and \$39,115.97 for the southeast area, \$65,887.09 for the northwest area, \$126,766.39 for equipment repair, \$90,621.00 for the slurry wall/pretrenching, \$84,143.19 for the railroad track and \$64,128.00 for the closures for the southeast, northwest and railroad track areas.

PPE Upgrades for Barrier Wall and Extraction Trench Construction Change Order Request # 400-002a and 400-002b

The bid for the construction of the Polywall and extraction trenches was predicated upon PPE Level D. In order to do most tasks associated with the installation or equipment repair or maintenance, we were required by the MWCI HASP personnel to be in Modified Level D PPE. The bid pricing for the construction of the barrier wall assumed that it would be accomplished in Level D PPE for 80 percent of the wall and the remaining 20 percent of the wall would be constructed in Level C. The time associated with Level C PPE exceeded the 20 percent included in the bid.

Cost breakdowns are provided on the attached spreadsheets for the barrier wall construction and for the extraction trench construction. These cost breakdowns reflect daily costs for both activities.

HTI is requesting an additional seventeen days in time extensions and \$159,428.83 in related costs for the barrier wall PPE upgrades and \$43,384.70 for the upgrades for the extraction trenches.

Page 5 July 28, 1997 Mr. Todd A. Lewis

Force Majeure: Costs Associated with Union Strikes Change Order Request # 400-004

This request was brought about by the Union strike against HTI over the utilization of non-Union labor for the construction activities. HTI bid the project as a non-union entity pursuant to the Request for Proposal and subsequent correspondence. The strike started in late January of 1997 and continued into early March of 1997. During that time, HTI was blocked from receipt of material that were required for construction at the site. In total, HTI was delayed for 47 days, until the issues were settled with Operators Union 150. The committee ultimately agreed to pay limited costs associated with employing Union labor at the site, however no provisions were made for compensation to HTI for lost time or additional costs incurred during the strike. The cost is summarized on the attached spreadsheet.

HTI is requesting an additional forty-seven days in time extensions and \$91,481.78 in related costs.

Costs Associated with Delays and Standby for Hazardous Buried Drums along Barrier Wall Alignment near Station 34+00 Change Order Request # 400-010

Buried drums that contain hazardous wastes were encountered near barrier wall station 34+00 during the slurry wall/pre-trenching installation. This area was skipped over to avoid the drums. Approximately one day was lost since the trencher had to be removed from the ground and relocated approximately 100 feet on the other side of the drums for this changed condition. Ultimately the barrier wall alignment was modified to the north to included the buried drums within the containment area.

HTI is requesting one additional day in time extension and \$4,217.86 in related costs.

Costs Associated with Delays and Standby for the Northern Barrier Wall Alignment Change

Change Order Request # 400-019

As a result of the discovery of additional buried drums that were found in the second northern alignment for the barrier wall, it was decided to relocate the barrier wall to the north. HTI is requesting standby costs from May 9, 1997, through May 14, 1997. Trenching had progressed as close to the new alignment as possible without removing the existing watermain serving the treatment facility. In order to facilitate another roll of HDPE, the watermain would have to have been removed and remained out of service until the new alignment could be resolved. HTI

Page 6 July 28, 1997 Mr. Todd A. Lewis

proceeded with other activities, however equipment and crews were on standby as discussed pending approval of the new alignment.

HTI is requesting an additional five days for time extension and \$40,571.79 in related costs.

Costs Associated with PCB Contaminated Soils Removal and Fill Replacement for PGCS 3 Change Order Request # 400-006

At the request of MWCI, HTI relocated PCB contaminated soils to an adjacent stockpile area. The excavated material was backfilled with off-site borrow material and the stockpile was covered with off-site borrow material as well. MWCI indicated in a letter dated, March 31, 1997, that it was being forwarded to the committee for approval. The costs are summarized in the attached letter dated February 26, 1997.

HTI is requesting an additional one day time extension and \$4,941.18 in related costs.

Costs Associated with Off-site Roadway Improvements Change Order Request # 400-007

HTI placed slag material to improve the off-site access road prior to an EPA visit to the site at the request of MWCI. HIT is requesting an additional one day time extension and \$5,702.08 in related costs.

Costs Associated with Dewatering near Underground Drain Tiles for Water Line Crossing Change Order Request # 400-009

In the course of attempting to remove the eight inch water main on, April 8, 1997, a changed condition was encountered when the dewatering facilities were unable to pump down the water table sufficiently to remove the water line. This was caused by numerous small diameter clay tile drains, probably from former agricultural operations at the site, were discharging large volumes of groundwater into the excavation. As a result of the unforeseen changed condition, HTI was forced to subcontract Griffin Dewatering to dewater the area. The costs are summarized on the attached letter dated, May 20, 1997.

HTI is requesting a two day time extension and \$15,816.57 in related costs.

Costs Associated with Additional Permeability Testing for Barrier Wall Construction Change Order Request # 400-013

MWCI requested that HTI perform additional permeability testing associated with the slurry wall/pre-trenching operation. The costs are outlined in the attached letter dated May 20, 1997.

HTI is requesting an additional \$3,682.24 in laboratory and sampling costs.

Force Majeure: Costs Associated with Extreme Weather Event Change Order Request # 400-023

In late June of 1997, a series of thunderstorms brought heavy rainfall to the site. This resulted in flooding of the bench at the railroad crossing that prevented the installation of Polywall on June 23rd, 24th and 25th. This occurrence is a force majeure event and HTI is seeking relief as such.

HTI is requesting a three day time extension and \$31,878.35 in additional costs.

We look forward to meeting with you to resolve these issues. Please give me a call after you have had a opportunity to review the information.

Sincerely,

Donald R. Justice

President and C.E.O.

Changed Conditions Related to Additional Refuse Removal CO# 400-001, 400-001b and 400-005

BREAKDOWN OF COSTS REFUSE REMOVAL CHANGE ORDER OFF-SITE

Notes:

- 1. Calculations based upon a cut and fill operation running concurrently.
- 2. Calculations completed in January, 1997
- 3. Fill quantity assumes estimated quantity outside areas delineated in design documents
- 4. Fill quantity included in proposal based upon the information supplied by MWCI

Estimated Additional Fill Equipment Included:	Required: Pick-up Cat 250 Hauler Loader Track Backhoe Cat D-5 LGP	3531 2 ea. 2 ea. 2 ea. 2 ea. 1 ea.	@	6.36	\$22,457.16
	Cat 973	l ea.	@	6371.64 day	\$44,601.48
Labor:	Operators Foreman Supt.	8 ea. 1 ea. 1 ea.	@	6269.67 day	\$43,887.69
	-		Œ.	0207.07 day	Ψ+3,007.07
Other:	Transport H & S Sub.	l ls l ea.			
•	Job Site OH	1 ls	@	4,474.44 day	\$31,321.08
				Sub-Total	\$142,267.41
				10%	\$14,226.74
				ОН	\$ 7,830.85
				TOTAL	\$164,325.00

Sheet1

HORIZONTAL TECH	NOL	OGIES, IN	IC.						[-		
STANDBY COST RE	POR	T FOR AC	S - GRIFF	ITH		·						
Weekly			·									
Personnel:	Da	ily Rate	Fri. 1/24	Sat. 1/25	Sun 1/26	Mon. 1/27	Tues. 1/28	Wed. 1/29	Thurs. 1/30	Total		Cost
Mark Justice	\$	480.00	0.33	0.50	0.75	0.50				2.08	\$	999.84
George Powell	\$	436.92	0.50	1.00	1:00	1.00				3.50		1,529.22
Johnny Edwards	\$	354.00	0.50	0.50	0.75	0.50				2.25	\$	796.50
Garnet McCurdy	\$	326.00	0.33	0.75	0.75	0.33				2.16	\$	705.14
Phillip Procell	\$	270.00		-	0.50	0.50				1.00	\$	270.00
Straley Melvin	\$	298.00			0.50	0.50				1.00	\$	298.00
Randy Rebarchek	\$	244.80			0.50	0.50				1.00	\$	244.80
David Kargus	\$	239.80			0.75	0.33				1.08	\$	258.98
Venson Flowers	\$	244.80	0.33	0.50	0.75	0.75				2.33	\$	571.12
Wilfredo Jeminez	\$	277.00	0.33	0.50	0.75	0.50				2.08		576.99
Rodney McCurdy	\$	244.00	0.33	0.75	0.75	0.33				2.16		527.77
Rick Eckhardt	\$	375.00			0.50	0.50				1.00		375.00
Scott Martin	\$_	249.00	0.50	0.75	0.75	0.75		·		2.75		684.75
								<u> </u>		0.00		
	_									0.00	\$_	-
Equipment:										0.00		-
Trencher #6	\$_	600.00	0.75		1.00					3.75		2,250.00
Trencher #7	\$_	750.00		0.75		1.00				2.75		2,062.50
Trencher #8	\$	225.00	0.75		1.00	1.00				3.75	-	843.75
Cat 231 BH	\$	275.00	0.75			1.00				3,50		962.50
Cat 936 LD	\$	150.00	0.75			1.00				3.75		562.50
Kawasaki LD	\$	150.00	0.25			1.00				3.00		450.00
Cat 426 BL	\$	60.00	0.75	1		1.00				3.75		225.00
Mack - Blue	\$_	160.00	0.50			1.00				3.50		560.00
Mack - Black	\$	160.00	0.75							3.25		520.00
Lowboy	\$	-	0.75				l			3.75	L - ' . —	-
Float	\$	-	0.75			0.50		ļ <u> </u>		3.25		-
Mech. Truck	\$	75.00	0.25							2.50		187.50
Int. Flat	\$	75.00	0.75							3.75		281.25
F-350	\$	50.00	0:25		0.75					1.50		75.00
F-150	\$	50.00	0.25				1			2.08		104.00
Bronco	\$	50.00	0.25		. 0.75					1.50		75.00
Sonoma	\$	50.00	0.25	0.50	0.75	0.50				2.00	\$	100.00

Sheet1

GMC - Red	\$	50.00	0.25	0.75	1.00	0.75	**************************************	2.75	\$	137.50
Ranger	\$	50.00	0.25	0.75	0.75	0.33		2.08	\$	104.00
Welders/Tanks	\$	50.00	0.25	0.50	0.75	0.50		2.00	\$	100.00
IR Forklift	\$	145.25	0.25	0.75	1.00	1.00		3.00	\$	435.75
Forklift-WH#2	\$	73.89	0.25	0.50	1.00	1.00		2.75	\$	203.20
D-5H LPG	\$	316.25	0.50	0.75	1.00	0.50		2.75	\$	869.69
973 Track Loader	\$	589.38	0.75	1.00	1.00	1.00		3.75	\$	2,210.18
Hitachi 300 LC	\$	460.00	0.75	1.00	1.00	0.33		3.08	\$	1,416.80
Cat 250 Hauler	\$	428.38	0.75	1.00	1.00	0.33		3.08	\$	1,319.41
Cat 250 Hauler	\$	428.38	0.00	0.00	0.00	0.00		0.00	\$	-
Compressor	\$	33.06	0.75	1.00	1.00	1.00		3.75	\$	123.98
Drop Deck Trailer	\$	25.88	0.75	1.00	1.00	1.00		3.75	\$	97.05
OVA	\$	72.45	0.75	0.75	0.75	0.75		3.00		217.35
Tanker	\$	54.63	0.75	1.00	1.00	1.00		3.75		204.86
Tanker	\$	54.63	0.75	1.00	1.00	1.00		3.75		204.86
Boiler	\$_	224.25	0.75	1.00	1.00	1.00		3.75		840.94
Poly Trailer	\$	56.35	0.75	1.00	1.00	1.00		3.75		211.31
Poly Trailer	\$	56.35	0.75	1.00	1.00	1.00		3.75		211.31
Boom Truck	\$	261.63	0.50	0.50	1.00	0.50		2.50		654.08
								0.00		-
	<u> </u>							0.00	<u> </u>	
Misc.:								0.00		<u>-</u>
Warehouse #1	\$	60.00	0.50	1.00	1.00	1.00		3.50		210.00
Warehouse #2	\$	150.00	0.50	0.75	0.75	0.75		2.75		412.50
Utilities	\$_	75.00	0.50	1.00	1.00	1.00		3.50		262.50
Rental Cars	\$	75.00	0.50	1.50	1.50			5.00		375.00
Health & Safety	\$	75.00	0.50	1.00	0.75			3.00		225.00
Airfare	\$	420.00	0.50	1.00	1.00			3.50		1,470.00
Foster-Wheeler	\$	842.45	0.75	0.00	0.00	0.00		0.75	\$	631.84
									<u> </u>	
Total:									\$	30,246.21

HORIZONTAL TECHNOLOGIES, INC. On-site Refuse Removal Cost Report March April March April Employee: 26 27 15 Total Cost Total 480.00 Officer Project Manager 3 2 3 12 \$ 437.00 582.67 0 \$ 354.00 Supervisor (Box) \$ Supervisor (Ground) 6 5 5.5 20.5 326.00 742.56 Supervisor (Mixing) 0 \$ 270.00 Trencher Operator 4 \$ 298.00 132.44 0 \$ 244.80 **Ground Support** 0 \$ 277.00 Bentonite Dry Operator 8 12 8 11 39 \$ 245.00 1,061.67 Truck Driver 0 \$ 245.00 Safety Person 0 \$ 340.00 Operator 4 6 5 5.5 20.5 \$ 518.00 1,179.89 0 \$ 518.00 Operator Sub-Total 3,699.22 Equipment: Trencher 6007 16 \$ 750.00 \$ 1,500.00 275.00 \$ 343.75 Cat 231 Backhoe 4 6 10 \$ Loader 12 10 11 41 \$ 150.00 768.75 0 \$ 150.00 \$ Mixer Mech. Truck 0 \$ 75.00 50.00 75.00 Vehicle 4 3 2 3 12 \$ \$ Vehicle 6 5 5.5 20.5 50.00 128.13 0 \$ 50.00 Vehicle 0 \$ Vehicle 50.00 0 50.00 Vehicle 50.00 Welders/Cutters 0 Small Tools 6 5 5.5 20.5 65.00 166.56 0 \$ 145.25 IR Forklift Nissan Forklift 0 \$ 73.89 0 316.25 D-5H 5 5.5 20.5 428.38 1,097.72 Cat 250 Hauler 6 \$ 10.5 \$ 460.00 603.75 Hitachi LC300 5 5.5 0 \$ 33.06 Compressor Generator 0 46.00 25.88 Drop Deck Trailer 0 0 54.63 Tanker 0 54.63 Tanker 0 56.35 Poly Tank Poly Tank 0 56.35 \$ Ford Boom Truck 0 \$ 261.63 4,683.66 Sub-Total Materials 1,500.00 250.00 6 Fill 6 S 0 0 0

Sub-Total										\$ 1,500.00
Other:										_
Warehouse/Utilities	0.25	0.3	0.25	0.25	·		1.0	5 \$	285.00	\$ 299.25
Rental Cars								0 \$	150.00	\$ - (
Airfare	0.5	0.6	0.5	0.5		•	2.	1 \$	420.00	\$ 882.00
QA/QC - FW								0 \$	721.77	\$ -

F-W Expense

Sub-Total \$ 1,181.25 Sub-Total \$ 11,064.13 5% OH \$ 553.21 10% Profit \$ 1,161.73

0 \$

120.68

TOTAL

12,779.07

Changed Conditions Related to Subsurface Cobbles and Bolders
Change Order Request # 400-011, 400-012, 400-011b, 400-005, 400-021, and 400-022

HORIZONTAL TECHNOLOGIES, INC. SE AREA COBBLE/BOULDER CHANGE ORDER Cost Report

Cost Report										
Employee:	March 11th	March 12th	March 13th	March 14th	March 15th	March 16th	March 17th	Total	Cost	Total
Officer	2.5	9.5	5					17 \$		\$ 906.67
Project Manager								0 \$	437.00	\$ -
Supervisor (Box)	2.5	9.5	5			2		19 \$	354.00	\$ 747.33
Supervisor (Ground)	2.5	9.5			3	8		23 \$		\$ 833.11
Supervisor (Mixing)	2.5	9.5						12 \$		\$ 360.00
Trencher Operator	2.5	9.5			8			20 \$		\$ 662.22
Ground Support	2.5	9.5						12 \$		\$ 326.40
Bentonite Dry	2.5	9.5						12 \$		\$ 369.33
Operator	2.5	9.5					9.5	21.5 \$		\$ 585.28
Truck Driver	2.5							2.5 \$		\$ 68.06
Safety Person	2.5	9.5	_		40.5	4.5	0.5	12 \$		\$ 453.33
Operator	2.5 2.5	9.5	5		10.5	4.5	9.5	41.5 \$ 2.5 \$		\$ 2,388.56
Operator	2.5 2.5					2	9.5			143.89
Labor Labor	2.5 2.5				5.5 5.5	2	8.5	19.5 \$ 10 \$		\$ 530.83 \$ 272.22
Sub-Total	2.5				5.5			10 \$		
Sub-rotal									;	8,647.23
Equipment:							_			
Trencher 6007	2.5	9.5	8	8	8	8	8	52 \$	750.00	4,875.00
Cat 231 Backhoe	2.5	9.5			8	8	8	36 \$		1,237.50
Loader	2.5	9.5						12 \$	150.00	225.00
Mixer	2.5	9.5			8	8	8	- 36 \$	150.00	675.00
Mech. Truck	2.5	9.5			8	8	8	36 \$	75.00	337.50
Vehicle	2.5	9.5	8		8	8	8	44 \$	50.00	275.00
Vehicle	2.5	9.5	8		8	8	8	44 \$	50.00	275.00
Vehicle	2.5	9.5						12 \$	50.00	75.00
Vehicle	2.5	9.5						12 \$	50.00	75.00
Vehicle	2.5	9.5						12 \$	50.00	75.00
Welders/Cutters	2.5	9.5			8	8	8	36 \$	50.00	225.00
Small Tools	2.5	9.5	8		8	8	8	44 \$	65.00	357.50
IR Forklift								0 \$	145.25	.
Nissan Forklift	2.5	9.5	8	8	8	8	8	52 \$	73.89	480.29
D-5H	2.5	9.5						12 \$	316.25	474.38
Cat 250 Hauler								0 \$	428.38	
Hitachi LC300	2.5	9.5	8					20 \$	460.00	1,150.00
Compressor	2.5	9.5	8	8	8	8	8	52 \$	33.06	
Generator	2.5	9.5	8	8	8	8	8	52 \$	46.00	
Drop Deck Trailer	2.5	9.5	8	8	8	8	8	52 \$	25.88	
Tanker	2.5	9.5	8	8	8	8	8	52 \$	54.63	
Tanker	2.5	9.5	8	· 8	8	8	8	52 \$	54.63 \$	
Poly Tank	2.5	9.5	8	8	8	8	8	52 \$	56.35 \$	
Poly Tank	2.5	9.5	8	8	8	8	8	52 \$	56.35	
Ford Boom Truck Sub-Total	2.5	9.5	8	8	8	8	8	52 \$	261.63 \$	
								1		·
Parts:										
Cutters	40							40 \$	31.00 \$	
Chain								-	1,100.00 \$	- 1
Steel	400							0	4 40	222.40
Bolts/Nuts	160							160 \$	1.49 \$	
Sub-Total									\$	1,478.40
Other:										
Warehouse/Utilities	0.25	1	0.5	0.5	0.5	0.5	0.5	3.75 \$	285.00 \$	1,068.75
Rental Cars	0.25	i	0.5	0.5	0.5	0.5	0.5	3.75 \$	150.00 \$	
Airfare	0.25	` i	0.5	0.5	0.5	0.5	0.5	3.75 \$	420.00 \$	1,575.00
QAQC - FW	1	i	1	1	1	1	1	7 \$	721.77 \$	
F-W Expense	i	i	i	i	i	1	1	7 \$	120.68 \$	844.76
Sub-Total									\$	
								-		:
									ub-Total \$	-
									5% OH \$	•
•									% Profit \$	
								L	TOTAL \$	39,115.97

HORIZONTAL TECHNOLOGIES, INC.
NW AREA COBBLE/BOULDER CHANGE ORDER
Cost Report

Employee: 1: Officer Project Manager Supervisor (Box) Supervisor (Ground) Supervisor (Mixing) Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck Sub-Total	1th 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.	12th 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 10 10 10 5 10 10 10	14th 5	15th 10.5 5 10.5 11.5 11.5 11.5 11.5 10.5 8 8 8 8 8 8 8 8 8	16th 6 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	17th 10.5 2.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 8 8 8 8 8 8 8 8 8 8 8	Total 58.5 \$ 20.5 \$ 27 \$ 43 \$ 32 \$ 65.5 \$ 55.5 \$ 54.5 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 54.5 \$ 53 \$ 54.5 \$ 55	750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00	\$ 1,20 \$ 65 \$ 80 \$ 33 \$ 33 \$ 21 \$ 8
Project Manager Supervisor (Box) Supervisor (Ground) Supervisor (Mixing) Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Trencher 6007 Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	5 11.5 11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5555 55555 55555 55555	10 10 5 10 10	11 11 11 5 8 8 8 8 8 8 8 8	5 10.5 11.5 11.5 11.5 10.5 10.5 10.5	366666666666666666666666666666666666666	2.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10	20.5 \$ 27 \$ 43 \$ 32 \$ 65.5 \$ 55.5 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53	750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00	\$ 9 \$ 1,0 \$ 1,5 \$ 2,1 \$ 1,5 \$ 8 \$ 2,0 \$ 2,4 \$ 2,4 \$ 2,6 \$ 19,6 \$ 1,2 \$ 8 \$ 33 \$ 33 \$ 35 \$ 33 \$ 35 \$ 33 \$ 35 \$ 33 \$ 35 \$ 35
Supervisor (Box) Supervisor (Ground) Supervisor (Ground) Supervisor (Mixing) Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8	5555 55555 55555 55555	10 5 10 10 10	11 5 8 8 8 8 8 8 8	10.5 10.5 11.5 11.5 11.5 10.5 10.5 8 8 8 8 8 8 8 8	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5	27 \$ 43 \$ 32 \$ 65.5 \$ 55.5 \$ 28 \$ 53 \$ 54.5 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 3	354.00 326.00 270.00 298.00 244.80 277.00 245.00 340.00 518.00 518.00 750.00 150.00 75.00 50.00 50.00 50.00 50.00	\$ 1,0 \$ 1,5 \$ 2,1 \$ 1,5 \$ 1,5 \$ 1,4 \$ 2,0 \$ 2,4 \$ 6,5 \$ 19,6 \$ 1,2 \$ 3,3 \$ 3,5 \$ 3,5
Supervisor (Ground) Supervisor (Mixing) Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	555 5555 555555 55555	10 5 10 10 10	11 5 8 8 8 8 8 8 8	10.5 11.5 11.5 11.5 10.5 10.5 10.5 8 8 8 8 8 8 8 8	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5	43 \$ 32 \$ 65.5 \$ 55.5 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53	750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00 750.00	\$ 1,5 \$ 2,1 \$ 1,5 \$ 1,5 \$ 2,0 \$ 2,4 \$ 2,0 \$ 2,4 \$ 1,2 \$ 65 \$ 19,6 \$ 33 \$ 33 \$ 33 \$ 35 \$ 35 \$ 33 \$ 35 \$ 35
Supervisor (Mixing) Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	555 5555 555555 55555	10 5 10 10 10	11 5 8 8 8 8 8 8 8	11.5 11.5 11.5 10.5 10.5 10.5	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5 10.5 8 8 8 8 8 8 8 8 8	32 \$ 65.5 \$ 55.5 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 543 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 5	270.00 298.00 244.80 277.00 245.00 340.00 518.00 518.00 750.00 150.00 75.00 50.00 50.00 50.00 50.00	\$ 9 \$ 2,1 \$ 1,5 \$ 8 \$ 7,8 \$ 2,0 \$ 2,4 \$ 2,6 \$ 19,6 \$ 1,20 \$ 19,6 \$ 33 \$ 33 \$ 33 \$ 33 \$ 35 \$ 33 \$ 35 \$ 33 \$ 35 \$ 35
Trencher Operator Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	55 5555 55555 55555	10 5 10 10 10 10	11 5 8 8 8 8 8 8 8	11.5 11.5 11.5 10.5 10.5 10.5	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5 10.5	65.5 \$ 55.5 \$ 28 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53	298.00 244.80 277.00 245.00 340.00 518.00 518.00 750.00 150.00 75.00 50.00 50.00 50.00 50.00	\$ 2,1'\$ 1,5'\$ 8 8 7 7 8 2,0'\$ \$ 2,4'\$ \$ 2,6'\$ \$ 19,6'\$ \$ 1,20'\$ \$ 4,96'\$ \$ 1,20'\$ \$ 65'\$ \$ 86'\$ \$ 33'\$ \$ 21'\$ \$ 65'\$ \$ 86'\$ \$ 33'\$ \$ 33'\$ \$ 21'\$ \$ 65'\$ \$ 86'\$ \$ 33'\$ \$ 33'\$ \$ 33'\$ \$ 35
Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5555 555555 55555	10 5 10 10 10 10	11 5 8 8 8 8 8 8 8	11.5 11.5 10.5 11.5 10.5 8 8 8 8 8 8 8	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5	55.5 \$ 28 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 5	750.00 275.00 275.00 275.00 518.00 750.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 1,5 \$ 8 \$ 7,8 \$ 1,4 \$ 2,0 \$ 2,4 \$ 2,4 \$ 1,20 \$ 1,20 \$ 1,20 \$ 3,3 \$ 3,3 \$ 3,3 \$ 3,5 \$ 5,5 \$ 5,5
Ground Support Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5555 555555 55555	10 5 10 10 10 10	11 5 8 8 8 8 8 8 8	11.5 11.5 10.5 11.5 10.5 8 8 8 8 8 8 8	666666666666666666666666666666666666666	10.5 10.5 10.5 10.5 10.5 10.5	55.5 \$ 28 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 5	750.00 275.00 275.00 275.00 518.00 750.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 1,5 \$ 8 \$ 7,8 \$ 1,4 \$ 2,0 \$ 2,4 \$ 2,4 \$ 1,20 \$ 1,20 \$ 1,20 \$ 3,3 \$ 3,3 \$ 3,3 \$ 3,5 \$ 5,5 \$ 5,5
Bentonite Dry Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Trencker Vehicle Vehicl	11.5 11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5555 55555 5555	10 10 10 10 10	8 8 8 8 8 8 8	11.5 10.5 11.5 10.5 8 8 8 8 8 8 8	6 6 6 6 6 6 6 6 6 6 6 6 6	10.5 10.5 10.5 10.5 10.5	28 \$ 28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 35 \$ 35 \$ 35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 5	750.00 275.00 275.00 275.00 275.00 275.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 8,8 7,7 8,5 1,4 8,5 2,4 8,5 6,5 8,6 8,6 8,6 8,6 8,6 8,6 8,6 8,6 8,6 8,6
Operator Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	555555555555555555555555555555555555555	10 10 10 10 10	8 8 8 8 8 8	10.5 11.5 10.5 8 8 8 8 8 8 8	6666666666666666	10.5 10.5 10.5 10.5 8 8 8 8 8 8 8 8 8 8	28 \$ 53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 35 \$ 35 \$ 35 \$ 35 \$ 53 \$ 53 \$ 5	750.00 275.00 275.00 275.00 275.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00 50.00	\$ 7, \$ 1,4 \$ 2,0 \$ 2,4 \$ 6,5 \$ 19,6 \$ 1,20 \$ 3,3 \$ 3,5 \$ 5,5 \$ 5,5
Truck Driver Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	11.5 11.5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	555555555555555555555555555555555555555	10 10 10 10 10	8 8 8 8 8 8	11.5 10.5 8 8 8 8 8 8 8 8	66666666666666	8 8 8 8 8 8 8 8 8 8	53 \$ 54.5 \$ 43 \$ 11 \$ 53 \$ 35 \$ 35 \$ 35 \$ 53 \$ 53 \$ 53 \$ 5	750.00 750.00 150.00 150.00 75.00 150.00 50.00 50.00 50.00 50.00 50.00 50.00	\$ 1,4 \$ 2,0 \$ 2,4 \$ 6. \$ 19,6 \$ 1,2 \$ 1,2 \$ 6. \$ 8,8 \$ 33 \$ 33 \$ 35 \$ 33 \$ 35 \$ 35 \$ 35 \$ 35
Safety Person Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8	555555555555555555555555555555555555555	10 10 10 10 10	8 8 8 8 8 8	11.5 10.5 8 8 8 8 8 8 8 8	6666666666666	8 8 8 8 8 8 8 8 8 8	54.5 \$ 43 \$ 11 \$ 53 \$ 35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$ 5	750.00 275.00 150.00 75.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 2,00 \$ 2,4 \$ 66 \$ 19,6 \$ 1,20 \$ 80 \$ 33 \$ 33 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35
Operator Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8	555555555555555555555555555555555555555	10 10 10 10 10	8 8 8 8 8 8	8 8 8 8 8 8 8 8 8	6 6 6 6 6 6 6 6 6 6 6 6	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	53 \$ 35 \$ 35 \$ 53 \$ 53 \$ 53 \$ 53 \$ 53 \$	750.00 275.00 150.00 150.00 50.00 50.00 50.00 50.00 50.00	\$ 2,4 \$ 65 \$ 19,6 \$ 1,2 \$ 1,2 \$ 65 \$ 80 \$ 33 \$ 33 \$ 33 \$ 33 \$ 35 \$ 33 \$ 35 \$ 33 \$ 35 \$ 33 \$ 35 \$ 35
Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 10 10 10	8 8 8 8 8	8 8 8 8 8 8 8	6 6 6 6 6 6 6 6 6 6	8 8 8 8 8 8 8 8 8	53 \$ 35 \$ 35 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	750.00 275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00	\$ 65 \$ 19,66 \$ 1,20 \$ 1,20 \$ 65 \$ 65 \$ 33 \$ 33 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 3
Operator Sub-Total Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 10 10	8 8 8 8 8	8 8 8 8 8 8	66666666666	8 8 8 8 8 8 8 8 8	53 \$ 35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	750.00 275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 65 \$ 19,66 \$ 1,20 \$ 1,20 \$ 65 \$ 65 \$ 33 \$ 33 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 3
Equipment: Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 5 5 5 5 5 5 5 5 5 5 5 5	10 10 10	8 8 8 8 8	8 8 8 8 8 8	66666666666	8 8 8 8 8 8 8 8 8	53 \$ 35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	750.00 275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 19,6 \$ 4,9 \$ 1,2 \$ 65 \$ 80 \$ 33 \$ 33 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35 \$ 35
Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5555555 55555	10 10 10	8 8 8 8 8	8 8 8 8 8 8	6666666666	8 8 8 8 8 8 8 8 8	35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 1,20 \$ 65 \$ 80 \$ 33 \$ 33 \$ 21 \$ 8
Trencher 6007 Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5555555 55555	10 10 10	8 8 8 8 8	8 8 8 8 8 8	6666666666	8 8 8 8 8 8 8 8 8	35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 1,20 \$ 65 \$ 80 \$ 33 \$ 33 \$ 21 \$ 8
Cat 231 Backhoe Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5555555 55555	10 10 10	8 8 8 8 8	8 8 8 8 8 8	6666666666	8 8 8 8 8 8 8 8 8	35 \$ 35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 14 \$ 53 \$	275.00 150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 1,20 \$ 65 \$ 80 \$ 33 \$ 33 \$ 21 \$ 8
Loader Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	555555 55555	10 10	8 8 8 8	8 8 8 8 8	6 6 6 6 6 6 6 6	8 8 8 8 8 8	35 \$ 43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 14 \$ 14 \$ 53 \$	150.00 150.00 75.00 50.00 50.00 50.00 50.00 50.00	5 65 5 80 5 33 5 33 5 21 5 8 5 8
Mixer Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8	55555 55555	10 10	8 8 8 8	8 8 8 8 8	66666666	8 8 8 8 8 8 8 8	43 \$ 53 \$ 53 \$ 53 \$ 53 \$ 35 \$ 14 \$ 14 \$ 53 \$	150.00 75.00 50.00 50.00 50.00 50.00 50.00	\$ 80 \$ 45 \$ 33 \$ 21 \$ 8 \$ 8
Mech. Truck Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hítachí LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8 8 8 8 8	5555 55555	10 10	8 8 8 8	8 8 8 8 8	6 6 6 6 6 6 6	8 8 8 8 8 8	53 \$ 53 \$ 53 \$ 53 \$ 35 \$ 14 \$ 14 \$ 53 \$	75.00 50.00	\$ 45 \$ 33 \$ 21 \$ 8 \$ 8
Vehicle Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8 8 8	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 10	8 8 8 8	8 8 8 8 8	6 6 6 6 6	8 8 8 8 8	53 \$ 53 \$ 35 \$ 14 \$ 14 \$ 53 \$	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00	33 33 35 21 36 8 37 8 38 8 38 8
Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8	5 5 5 5 5 5 5 5	10	8 8 8 8	8 8 8 8 8	6 6 6 6	8 8 8 8 8	53 \$ 35 \$ 14 \$ 14 \$ 53 \$	50.00 5 50.00 5 50.00 5 50.00 5	33 3 21 5 8 5 8 5 33
Vehicle Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8 8	5 5 5 5 5 5 5 5	10	8 8 8 8	8 8 8 8	6 6 6 6	8 8 8 8 8	53 \$ 35 \$ 14 \$ 14 \$ 53 \$	50.00 5 50.00 5 50.00 5 50.00 5	33 3 21 5 8 5 8 5 33
Vehicle Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8 8	5 5 5 5 5 5	10	8 8 8	8 8 8	6 6 6 6	8 8 8 8	35 \$ 14 \$ 14 \$ 53 \$	50.00 5 50.00 5 50.00 5	21 5 8 5 8 5 33
Vehicle Vehicle Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8	5 5 5 5 5		8 8	8 8 8	6 6 6	8 8 8	14 \$ 14 \$ 53 \$	50.00 5 50.00 5	\$ 8 \$ 8 \$ 33
Vehicle Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8	5 5 5 5		8 8	8 8	6 6 6	8 8 8	14 \$ 53 \$	50.00 50.00	33
Welders/Cutters Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8	5 5 5 5		8 8	8 8	6 6	8 8	53 \$	50.00	33
Small Tools IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8	5 5 5 5		8 8	8 8	6	8	- •		
IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8 8	5 5 5 5		8 8	8 8	6		53 \$		
IR Forklift Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8	5 5 5	.0	8	8					5 43
Nissan Forklift D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8 8 8	5 5					8	43 \$		78
D-5H Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8	5		•		6	8	43 \$		39
Cat 250 Hauler Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8			_						
Hitachi LC300 Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck				8	8	6	8	43 \$	316.25	
Compressor Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	٥	· 5		8	8	6	8	43 \$	428.38	2,30
Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	0	5		8		6	8	35 \$	460.00	2,01
Generator Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	. 8	5		8	8	6	′8	43 \$	33.06	17
Drop Deck Trailer Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8	5		8	8	6	8	43 \$		24
Tanker Tanker Poly Tank Poly Tank Ford Boom Truck	8	. 5		8	8	6	8	43 \$		13
Tanker Poly Tank Poly Tank Ford Boom Truck	8	. 5				6	8	- •		
Poly Tank Poly Tank Ford Boom Truck				8	8			43 \$	54.63	
Poly Tank Ford Boom Truck	8	5		. 8	8	6	8	43 \$	54.63	
Ford Boom Truck	8	5		8	8	6	8	43 \$	56.35	30
Ford Boom Truck	8	5		8	8	6	8	43 \$	56.35	30
	8	5		8	8	6	8	43 \$	261.63	
Sub-Total	_ <u> </u>								201.00	
									•	20,30
Parts:								•		
Cutters	70	40			40			150 \$	31.00	4,65
Chain		2		2					1,100.00	
Steel		_		-				ō	1,100.00	7,70
		400			400		400		4 40	. 407
Bolts/Nuts Sub-Total	280	160			160		120	720 \$	1.49	
Sub-Total									3	10,12
Other: Warehouse/Utilities		0.5			0.75			4.75	005.00	4.25
	1	0.5		0.5	0.75	1	1	4.75 \$	285.00	
Rental Cars	1	0.5		0.5	0.75	. 1	1	4.75 \$	150.00	
Airfare	1	0.5		0.5	0.75	1	1 '	4.75 \$	420.00	1,99
QA/QC - FW	1	0.5				1	1	3.5 \$	721.77	2,52
F-W Expense	1	0.5				1	1	3.5 \$	120.68	
Sub-Total	<u>-</u>					<u> </u>	· · ·		- \$	
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									ub-Total \$	-
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									% Profit \$	
									TOTAL \$	65,88

lorizontal Technologies, Inc.

96-104 ACS GRIFFITH INDIANA

EQUIPMENT REPAIR CHANGE ORDER			_		7			7	_	٦.		7
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■		MONTH									· .	
	1	ENDING	1	LABOR		EQUIPMENT	MATERIALS		MARKUP	╢	TOTAL	
CHAIN & CUTTERS	1	APR - 97	╬	\$6,557.72	ŀ	\$12,977.75	\$241.71	Ļ	\$2,966.58	\vdash	\$22,743.76	1
	2	MAY - 97	╬	\$3,745.06	ŀ	\$6,148.50	\$18,228.35	L	\$4,218.29	H	\$32,340.20	2
	3	JUN - 97	╁	\$392.31	├			H	\$58.85	H	\$451.16	3
	4		╁		ŀ	ļ	<u> </u>	H		┞┨		4
EQUIPMENT REPAIR	5		-		ŀ		· 	-				5
06-007 TRENCHER	6		-	\$5,090.80	-		\$21,463.15		\$3,983.09	-	\$30,537.04	6
06-006 TRENCHER	7		╌	\$2,981.99	<u> </u>		\$13,952.55	$ \cdot $	\$2,540.18	- -	\$19,474.72	7
21-078 BOX	8		┝	\$18,451.75	F		\$0.00	L	\$2,767.76	-	\$21,219.51	8
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TOTALS	12		╁	\$37,219.63	Н	\$19,126.25	\$53,885.76	H	\$16,534.75	- :	126,766.39	12
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Installation of Slurry Wall and Pretrenching Item P (400-021)

- 1. Costs include additional labor, equipment, overhead and material (bentonite)
- 2. Slurry wall installed at MWCI direction to enclose the site (contain) waste ahead of Polywall installation and to locate areas where boulders and cobble may be encountered
- 3. Boulders and cobble rare and could cause preferential flow pathways
- 4. Costs calculated based upon an agreed upon unit price used for pay request submittal

Station 8+50 to Station 1+00 Station 41+00 to Station 24+50	750 LF 1650 LF
Total Footage Includes	2400 LF
Unit Price	\$58.09
TOTAL COST	\$139,416.00
Paid Under Northern Align CO	\$48,795.60
TOTAL DUE	\$90 621.00

Railroad Track Cha Cost Report	Sunday June	Monday June	Tuesday June	Wed. June	Thurs June	Fri. June	Sat. June	Sun. June			
Employee:	8th	9th	10th	11th	12th	13th	14th	15th	Total	Cost	Tota
Officer	10.5	17.5	21	10.5	10.5	10.5	10	10	100.5 \$		\$ 5,30
Project Manager									0 \$		\$
Supervisor (Box)		13.5	10.5	10.5	11.5	10.5	10	10	76.5 \$	354.00	\$ 3.00
Supervisor (Ground)	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$	326.00	\$ 3,1
Supervisor (Mixing)			10.5	10.5					21 \$	270.00	\$ 63
Trencher Operator	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$	298.00	\$ 2,88
Ground Support									0 \$	244.80	\$
Bentonite Dry									0 \$	277.00	\$
Operator	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$	245.00	\$ 2,36
Truck Driver			10.5	10.5	11.5	10.5	10	10	63 \$	245.00	\$ 1,7
Safety Person									0 \$	340.00	\$
Operator	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 5,00
Operator									0 \$	518.00	\$
Labor	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 2,36
Labor	10.5	13.5	10.5	10.5	11,5	10.5	10	10_	87 \$	245.00	\$ 2,36
Sub-Total											\$ 28,85
							-				
Equipment:											
Trencher 6007	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 8,15
Cat 231 Backhoe									0 \$	275.00	\$
Loader	10.5	13.5	10.5	10.5	11.5	10.5	. 10	10	87 \$		\$ 1,63
Mixer	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$	150.00	\$ 1,63
Mech. Truck	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 81
Vehicle	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 54
Vehicle	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 54
Vehicle	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 54
Vehicle	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 54
Tractor Pete	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 1,74
Welders/Cutters	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 54
Small Tools	10.5	13.5	10.5	10.5	11.5	10.5	10	10	.87 \$		\$ 70
IR Forklift	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 1,57
Nissan Forklift									0 \$		\$
D-5H									0 \$		\$
Cat 250 Hauler	10.5	12.5	10 E	40 E	44 5	10.5	40	10	0 \$ 87 \$		\$ \$ 5,00
Hitachi LC300	10.5	13.5	10.5	10.5 10.5	11.5	10.5	10	10	87 \$		\$ 5,00 \$ 35
Compressor Generator	10.5	13.5	10.5	10.5	11.5	10.5	10	10	0 \$		ຸ ງ ວວ \$
Drop Deck Trailer									0 \$		⊅ \$
Tanker									0 \$		\$ \$
Tanker									0 \$		\$ \$
Poly Tank	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 61:
Poly Tank	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 61
Crane	10.5	13.5	10.5	10.5	11.5	10.5	10	10	87 \$		\$ 2,84
Crane	10.5	13.5	10.5	10.5	11.5	10.5	10		0, 4		\$ 28,41
											# 20,41
				•	•						
Parts:									a		
Cutters	60					·			60 \$	31.00	\$ 1,86
Ploywall/Bentonite	1								•		\$ 1,60 \$ 2,60
rioywaii/benionite Idler	•	1									\$ 2,000 \$ 1,000
Bolts/Nuts	180	•							180 \$	•	\$ 1,000 \$ 26
Sub-Total	100		•						100 \$		\$ 5,72
Sub- i Olai					•						9 5,12
Other:											
Warehouse/Utilities	1	1	1	1	1	1	1	1	8 \$	285.00	\$ 2,28
Rental Cars	'	1	ı	ı	ı	1	7	1	0\$	150.00	
Kental Cars Airfare	4	4	4	1	4	4		4	8 \$		
QAVQC - FW	1	1	1	1	1	1		1		420.00	
F-W Expense	1	1	1 1				1	1	5 \$ 5 \$		\$ 3,600 \$ 600
Sub-Total		<u>'</u>	<u></u>				1	1	2.3		
July (Olat											\$ 9,85
										ub-Total	72,85
											\$ 72,85° \$ 3,64°
											5 7,649
									<u> </u>	TOTAL	\$ 84,14

PPE Upgrades for Barrier Wall and Extraction Trench Construction
Change Order Request # 400-002a and 400-002b

ACTION LEVELS FOR PERSONAL PROTECTIVE EQUIPMENT UPGRADES

The purpose of this document is to briefly summarize the action levels in justification of HTI's change order request for Personal Protective Equipment (PPE) upgrades.

Level D - As clearly specified in HTI's proposal dated August 26,1996, all site activities at American Chemical Services (ACS) located in Griffith, Indiana will be accomplished in Level D Personal Protective Equipment (PPE). Level D PPE is the minimum level of protection and is sufficient when no contaminants are present or there is no potential for unexpected inhalation of or contact with hazardous levels of <u>any</u> chemicals. Level D PPE consists of hard hat, safety glasses, and leather steel-toe work boot or shoes.

Modified Level D - Upgrade to Modified Level D PPE is required for specific site situations in which there is no danger of the work operations exposing the employee to inhalation of or contact with hazardous levels of any chemicals, however there is potential of contact with minor concentrations of chemicals. At the ACS site, potential contact came in the form of mud, snow, and slush mixed in the area of contaminated excavated soil. Modified Level D PPE consists of Level D PPE plus disposable outer suits, disposable chemical resistant inner gloves, disposable outer leather work gloves, and disposable chemical resistant outer boots.

Level C - The essential criteria for upgrade to Level C PPE based upon air monitoring instruments is for specific site situations in which the concentration of airborne substances ranges from background to 5 ppm above ambient background concentrations and the criteria for using air purifying respirators is met. This criteria is in accordance with the EPA's Publication 9285.1-03, "Standard Operating Safety Guides" (see Section 6.9.4 Level C Protection (Background to 5 ppm)). Level C PPE consists of Modified Level D PPE plus an air purifying respirator using the appropriate organic vapor cartridges and pre-filters for dust and mist.

Level B - Upgrade to Level B PPE is required for specific site situations in which the concentration of airborne substances exceeds 5 ppm but is less than 500 ppm. This criteria is in accordance with the EPA's Publication 9285.1-03, "Standard Operating Safety Guides" (see Section 6.9.3 Level B Protection (5 ppm to 500 ppm)) Level B PPE consists of Modified Level D PPE plus an air supplying respirator.

PRICE FOR PERSONAL PROTECTIVE EQUIPMENT UPGRADES

Level D - As clearly specified in HTI's proposal dated August 26,1996, all site activities at American Chemical Services located in Griffith, Indiana will be accomplished in Level D Personal Protective Equipment (PPE). Level D PPE is the minimum level of protection and is sufficient when no contaminants are present or there is no potential for unexpected inhalation of or contact with hazardous levels of any chemicals. Level D PPE consists of hard hat, safety glasses, and leather steel-toe work boot or shoes. There are no additional price for activities conducted in this level of protection.

Modified Level D - Upgrade to Modified Level D PPE is required for specific site situations in which there is no danger of the work operations exposing the employee to inhalation of or contact with hazardous levels of any chemicals however there is potential of minor contact with known concentrations of chemicals. Modified Level D PPE consists of Level D PPE plus disposable outer suits, disposable chemical resistant inner gloves, disposable outer leather work gloves, and disposable chemical resistant outer boots. Excluding cost for labor and down time of machinery, the additional daily per employee upgrade price for supplies required for site activities conducted in Modified Level D is summarized below:

ITEM	UPGRADE PRICE
Level D PPE	no charge
disposable outer suit (2 suits / day)	\$ 18.85
duct tape (1/10 roll per day)	\$ 0.44
disposable chemical resistant inner gloves (2 pairs / day)	\$ 0.50
disposable outer leather work gloves (2 pairs / week)	\$ 2.90
disposable chemical resistant outer boots (1 pair / month)	\$ 1.00
Modified D PPE Upgrade TOTAL	\$ 23.69

Level C - Upgrade to Level C PPE is required for specific site situations in which the concentration of airborne substances ranges from background to 5 ppm above ambient background concentrations and the criteria for using air purifying respirators is met. Level C PPE consists of Modified Level D PPE plus an air purifying respirator and cartridges. Excluding cost for labor and down time of the machinery, the additional daily per employee upgrade price for supplies required for site activities conducted in Level C is summarized below:

ITEM	UPGRADE PRICE
Modified Level D PPE	\$ 23.69
air purifying respirator (APR)	\$ 7.75

APR maintenance supplies (decon, disinfectant, parts, etc)	\$	2.00
disposable cartridges (1 pair / day)	\$	10.96
disposable pre-filters for dust & mist (1 pair / day)	\$	1.02
communication devices for inside exclusion zones	\$	3.75
Level C PPE Upgrade TOTAL	\$ 4	49.17

Level B - Upgrade to Level B PPE is required for specific site situations in which the concentration of airborne substances exceeds 5 ppm but is less than 500 ppm detected on portable field instruments. Level B PPE consists of Modified Level D PPE plus an air supplying respirator. The additional daily per employee upgrade cost required for site activities conducted in Level B has been previously negotiated at \$ 130.00 / day (see letter to Mr. Todd Lewis dated May 28, 1996 entitled "Response to May 23, 1996 ACS Barrier Wall Questions").

BARRIER WALL INSTALLATION Cost of Personal Protective Equipment (PPE) Upgrades

January Cost of PPE Upgrades

Date	Activity	H&S Concern	Number of PPE Upgrade		grades
ł			Mod D	Level C	Level B
Jan. 29, 97	Refuse Removal	OV = Peak to 1000 PPM		6	
Jan. 31, 97	Refuse Removal	suspect contamination	2		
		Total Number of January Upgrades	2	6	
		Total Cost of January Upgrades	\$ 47.38	\$ 295.02	\$ -

February Cost of PPE Upgrades

Date	Activity	H&S Concern	Numb	er of PPE U	ogrades
			Mod D	Level C	Level B
Feb. 3, 97	Refuse Removal	suspect contamination	3		
Feb. 4, 97	Refuse Removal	suspect contamination	9	4	·
Feb. 5, 97	Refuse Removal	suspect contamination	6	4	İ
Feb. 6, 97	Refuse/Polywall	suspect contamination		11	
Feb. 8, 97	Polywall Install.	OV = 6 PPM	1	7	2
Feb. 10, 97	Polywall Install.	OV = 4 PPM		.10	2 2
Feb. 11, 97	Polywall Install.	OV = 7 PPM		10	2
Feb. 12, 97	Refuse/Polywall	OV = 5 PPM		10	2 2 2
Feb. 13, 97	Refuse/Polywall	OV = 15 PPM		10	2
Feb. 14, 97	Refuse Removal	OV = 5 PPM	9	6	
Feb. 15, 97	Refuse Removal	Vinyl Cloride	8	2	
Feb. 16, 97	Bench	suspect contamination	10		
Feb. 17, 97	Bench	Vinyl Cloride	5	6	
Feb. 18, 97	Refuse/Bench	OV = 200 PPM, VC	6	11	
Feb. 19, 97	Polywall Install.	OV = 47 PPM	2	6	ł
Feb. 20, 97	Polywall Install.	OV = 13 PPM		16]
Feb. 21, 97	Polywall Install.	suspect contamination	13		
Feb. 22, 97	Bench/Polywail	suspect contamination	13		
Feb. 23, 97	Polywall Install.	suspect contamination	13		
Feb. 24, 97	Polywall Install.	OV = 80 PPM	6	5	1
Feb. 25, 97	Bench	OV = 25 PPM	7	6	
Feb. 26, 97	Polywall Install.	OV = 60 PPM		. 5	2
Feb. 27, 97	Polywall Install.	OV Peaks to 2500 PPM		8	2 2 2
Feb. 28, 97	Polywall Install.	OV Peaks to 2000 PPM	2	8	2
	Tota	Number of February Upgrades	112	145	17
	T	otal Cost of February Upgrades	\$ 2,653.28	\$ 7,129.65	\$ 2,210.00

March Cost of PPE Upgrades

Date	Activity	H&S Concern	Number of PPE		Upgrades	
			Mod D	Level C	Level B	
Mar. 1, 97	Polywall Install.	OV = Peaked		9	2	
Mar. 2, 97	Polywall Install.	OV = 100 PPM	3] 7	2	

Mar. 3, 97	Polywall Install.	OV = 100 PPM	1	7	2
Mar. 4, 97	Polywall Install.	suspect contaminaton	12	2	
Mar. 5, 97	Polywall Install.	suspect contaminator	7		
Mar. 6, 97	Polywall Install.	suspect contaminaton	12		
Mar. 7, 97	Polywall Install.	suspect contaminaton	10		
Mar. 8, 97	Polywall Install.	OV = 6 PPM		7	2 2
Mar. 9, 97	Polywall Install.	suspect contaminaton	1	6	2
Mar. 10, 97	Polywall Install.	suspect contaminaton		10	1
Mar. 11, 97	Polywall Install.	OV = 4 PPM	·	10	1
Mar. 12, 97	Polywall Install.	OV = 2.6 PPM		11	1
Mar. 13, 97	Polywall Install.	suspect contaminaton	ļ	7	
Mar. 14, 97	Polywall Install.	suspect contaminaton		5	
Mar. 15, 97	Polywall Install.	suspect contaminaton	5	<u>'</u>	
Mar. 17, 97	Polywall Install.	suspect contaminaton	4		
Mar. 18, 97	Polywall Install.	suspect contaminaton	4		'
Mar. 19, 97	Polywall Install.	suspect contaminaton	6 -		
Mar. 20, 97	Polywall Install.	suspect contaminaton	6		
Mar. 22, 97	Polywall Install.	suspect contaminaton	3		
Mar. 23, 97	Polywall Install.	suspect contaminaton	4		
Mar. 24, 97	Polywall Install.	suspect contaminaton	5		
Mar. 25, 97	Polywall Install.	suspect contaminaton	5		
Mar. 26, 97	Polywall Install.	suspect contaminaton	6		
Mar. 27, 97	Polywall Install.	suspect contaminaton	4	·	
Mar. 28, 97	Polywall Install.	suspect contaminaton	4		
		Total Number of March Upgrades		81	13
		Total Cost of March Upgrades	\$ 2,416.38	\$ 3,982.77	\$ 1,690.00

April Cost of PPE Upgrades

Date	Activity H&S Concern		Numb	er of PPE Up	grades
	·		Mod D	Level C	Level B
Apr. 3, 97	Polywall Install.	OV = 4 PPM	8		
Apr. 4, 97	Polywall Install.	OV = 1.7 PPM	. 5	2	
Apr. 5, 97	Slurry	OV = 11.7 PPM	6	3	
Apr. 6, 97	Slurry	OV = 3.5 PPM	5	1	1
Apr. 7, 97	Slurry	suspect contamination	7`	İ	
Apr. 8, 97	Slurry	suspect contamination	7	1	l
Apr. 9, 97	Slurry	OV = 12.7		7	1
Apr. 10, 97	Slurry	Vinyl Cloride		6	2
Apr. 11, 97	Slurry	suspect contamination	7		
Apr. 12, 97	Slurry	suspect contamination	4	2	1
Apr. 14, 97	Slurry	suspect contamination	5		
Apr. 16, 97	Slurry	suspect contamination	. 8	1	}
Apr. 17, 97	Slurry	suspect contamination	7]	
Apr. 18, 97	Polywall Install.	suspect contamination	6	l i	
Apr. 22, 97	Polywall Install.	suspect contamination	9 ′		
Apr. 23, 97	Polywall Install.	suspect contamination	2	Ì	
Apr. 27, 97	Polywall Install.	suspect contamination	3		
Apr. 30, 97	Polywall Install.	suspect contamination	10		
		Total Number of April Upgrades	99	22	5

May Cost of PPE Upgrades

Date	Activity	H&S Concern	Numb	er of PPE Up	grades
			Mod D	Level C	Level B
Ma. 1, 97	Polywall	suspect contamination	10		
Ma. 6, 97	Polywall	OV = 3.9 PPM	6	4	
Ma. 7, 97	Polywall	OV = 2.2 PPM	7	2	1
Ma. 8, 97	Polywall	OV = 16.2 PPM	8	2	1
Ma. 9, 97	Polywall	suspect contamination	5	4	
Ma. 10, 97	Polywall	suspect contamination	6		1
Ma. 11, 97	Polywall	OV = 50 PPM	6	1	
Ma. 12, 97	Polywall	suspect contamination	10		
Ma. 13, 97	Polywall	suspect contamination	7		
Ma. 14, 97	Polywall	OV = 8 PPM	11	1	
Ma. 15, 97	Slurry/Polywall	suspect contamination	4	8	[
Ma. 16, 97	Slurry	suspect contamination	6	2	{
Ma. 17, 97	Polywall	suspect contamination	5	1	ļ
Ma. 18, 97	Polywall	OV = 2 PPM	3	6	
Ma. 19, 97	Polywall	OV = 8 PPM	2	7	
Ma. 20, 97	Polywall	suspect contamination	6	4	
Ma. 28, 97	Polywall	suspect contamination	3	10	
Ma. 29, 97	Polywall	suspect contamination		11	
Ma. 30, 97	Polywall	suspect contamination		8	
Ma. 31, 97	Polywall	suspect contamination		7	
		Total Number of May Upgrades	105	78	1
		Total Cost of May Upgrades		\$ 3,835.26	\$ 130.00

June Cost of PPE Upgrades

Date	Activity	H&S Concerns	Numb	er of PPE Up	grades
			Mod D	Level C	Level B
Jun. 2, 97	Polywall	suspect contamination		6	
Jun. 3, 97	Polywall	suspect contamination		5	
Jun. 4, 97	Polywall	suspect contamination	4	, ,	
Jun. 5, 97	Polywail	suspect contamination	6		
Jun. 6, 97	Polywall	suspect contamination	8	1	-
Jun. 7, 97	Polywali	suspect contamination	4		
Jun. 8, 97	Polywall	OV = 14.4 PPM	4		1
Jun. 9, 97	Polywall	suspect contamination	10		
Jun. 10, 97	Polywall	suspect contamination	8	1 :	
Jun. 11, 97	Polywall	suspect contamination	8		
Jun. 12, 97	Polywall	suspect contamination	8		
Jun. 13, 97	Polywall	suspect contamination	6		
Jun. 14, 97	Polywall	suspect contamination	6		
Jun. 15, 97	Polywall	suspect contamination	6		
Jun. 16, 97	Polywall	suspect contamination	6 、		
Jun. 17, 97	Polywall	suspect contamination	9		
Jun. 18, 97	Polywall	suspect contamination	7		

Jun. 24, 97 Jun. 25, 97	Polywall Polywall	Dimethyl Sulfide Dimethyl Sulfide	3 3	3 5	1
Jun. 25, 97	Polywall	Dimethyl Sulfide	3	5	1
Jun. 26, 97 Jun. 27, 97	Polywall Polywall	Dimethyl Sulfide Dimethyl Sulfide	4 5	2 2	1
Jun. 28, 97	Polywall	Dimethyl Sulfide	6	2	
Jun. 30, 97	Polywall	Dimethyl Sulfide	7	3	
		Total Number of June Upgrades	156	38	6
		Total Cost of June Upgrades	\$ 3,695.64	\$ 1,868.46	\$ 780.00

July Cost of PPE Upgrades

Date	Activity	Activity H&S Concerns		er of PPE Up	grades
			Mod D	Level C	Level B
Jul. 1, 97	Polywall	Dimethyl Sulfide	8	3	-
Jul. 2, 97	Polywall	Dimethyl Sulfide	7	3	
Jul. 3, 97	Polywall	suspect contamination	10		
Jul. 4, 97	Polywall	suspect contamination			
Jul. 5, 97	Polywall	suspect contamination	6	•	
Jul. 6, 97	Polywall	suspect contamination	7		
Jul. 7, 97	Polywall	suspect contamination	8		
Jul. 8, 97	Polywall	suspect contamination	7		
Jul. 9, 97	Polywall	suspect contamination	7		
Jul. 10, 97	Polywall	suspect contamination	6		
Jul. 11, 97	Polywall	suspect contamination	6		
Jul. 12, 97	Polywall	suspect contamination	4		
Jul. 13, 97	Polywall	suspect contamination	3		
Jul. 14, 97	Polywall	suspect contamination			
Jul. 15, 97	Polywall	suspect contamination			
	<u> </u>	Total Number of July Upgrades	79		
•		Total Cost of July Upgrades	\$ 1,871.51		

TOTAL COST OF PPE UPGRADE \$ 39,169.85

Total Mod. D \$ 15,516.95 Total Level B \$ 5,460.00

52% of Level C \$ 9,460.31

TOTAL APPLIED OF OF PPE UPGRADE \$ 30,437.26

Daily Cost of PPE Upgrade \$128,991.57

TOTAL PPE UPGRADE COST FOR BARRIER WALL \$159,428.83

HORIZONTAL TECHNOLOGIES, INC. Daily Cost for Barrier Wall PPE Upgrade

•	*Daily Cost	Allocation	Total	
Labor: Officer	\$480.00	0.5	\$240.00	
Project Manager	\$437.00	0.5	\$218.50	
Supervisor (Box)	\$354.00	1.0	\$354.00	
Supervisor (Ground)	\$326.00	1.0	\$326.00	
Supervisor (Mixing)	\$270.00	1.0	\$270.00	
Trencher Operator	\$298.00	1.0 1.0	\$298.00 \$244.80	
Ground Support	\$244.80	1.0	\$239.80	
Ground Support	\$239.80 \$277.00	1.0	\$277.00	
Bentonite Dry	\$245.00	1.0	\$245.00	
Operator Truck Driver	\$245.00	1.0	\$245.00	
Safety Person	\$340.00	1.0	\$340.00	
Operator	\$518.00	1.0	\$518.00	
Operator	\$518.00	1.0	\$518.00	0.00.40
Sub-Total	\$4,792.60		\$4,334.10	\$4,334.10
	Daily Standby Rate			
Equipment: Trencher 6007	\$750.00	1.0	\$750.00	
Cat 231 Backhoe	\$275.00	1.0	\$275.00	
Loader	\$150.00	1.0	\$150.00	
Mixer	\$150.00	1.0	\$150.00	•
Mech, Truck	\$75.00	0.5	\$37.50	
Venicie	\$50 00	1.0	,\$50.00	
Vehicle	\$50.00	1.0	\$50.00	
Vehicle	\$50.00	1.0 1.0	\$50.00 \$50.00	
Vehicle	\$50.00 \$50.00	0.5	\$25.00	
Vehicle	\$50.00 \$50.00	0.5	\$25.00	
Welders/Cutters Smail Tools	\$65.00	1.0	\$65.00	•
IR Forklift	\$145.25	1.0	\$145.25	
Hitachi Forklift	573.89	1.0	\$73.89	
D-5H	\$316.25	05	\$158.13	
973 Loader	\$589.38	0.5	\$294 69	
Cat 250 Hauler	\$428.38	1.0	\$-128.38	
Hitachi LC300	\$-:60.00	0.5	\$230.00	
Compressor	\$33.06	1.0	\$33.06 \$46.00	
Generator	\$46.00 \$25.88	1.0 1.0	\$25.88	
Drop Deck Trailer	\$25.66 \$72.45	0.5	\$36.23	
OVA	\$54.63	1.0	\$54.63	
Tanker Tanker	\$54 63	1.0	\$54.63	
Boiler	\$224.25	0.3	\$56.06	
Poly Tank	\$56.35	1.0	\$56.35	
Poly Tank	\$56.35	1.0	\$56.35	
Boom Truck	\$251.63	1.0	\$261.63	62 600 65
Sub-Total	\$3,778.15		\$3,688.65	\$3,688.65
Other:				
Warehouse/Utilities	\$285.00	0 5	\$142.50	
Rental Cars	\$150.00	0.5	\$75.00	
Health & Safety	\$306.00	0.5	\$154.00	
Airfare	\$420.00	0.5	\$210.00	
	\$1,163.00		\$0.00 \$581.50	\$581.50
Foster-Wheeler				400.,20
QA/QC	\$721.77	1.0	\$721.77	
Lodging/Meais/Misc.	\$120.68	1.0	\$120.68	
Sub-Total			\$842.45	\$842.45
			Daily Cost	\$9,446,70
			5% OH	\$472.34
			10% Profit	\$991.90
			Sub-Total	\$10,910.94
			HR. COST	\$1,212.33
			Hours	133
D	-1 D		Total Hours	105.4
Based Upon 80% Leve	ສ ບ	7	TOTAL COST	\$128,991.57
		•		· ·

Cost includes Meais, Housing, Taxes, Insurance and Benefits
 One Hour Allowed for Morning Dress-Out. Lunch De-con and Re-Dress, and Evening Decon
 Note: PPE Disposal by Others

EXTRACTION WELL INSTALLATION

Cost for Personal Protective Equipment (PPE) Upgrades

January Cost of PPE Upgrades

Date	Activity	H&S	Nun	ber of PPE	Upgrades
		Concern	Mod D	Level C	Level B
Jan 2, 97	PGCS 1 Installation	OV = >5 ppm		7	1
Jan 4, 97	PGCS 1 Installation	OV = 3 ppm		5	1
Jan 5, 97	PGCS 3 Installation	suspect contamination		5	
Jan 6, 97	PGCS 3 Installation	suspect contamination		6	
Jan 8, 97	PGCS 3 Installation	OV = 12.1 ppm	1	6	1
Jan 9, 97	PGCS 2&3 Installation	suspect contamination		7	
Jan 15, 97	PGCS 2 Installation	OV = 18 ppm		7	1
Jan 16, 97	PGCS 2 Installation	suspect contamination		7	
Jan 20, 97	PGCS 2&3 Installation	suspect contamination		5	
Jan 21, 97	PGCS 1&2 Installation	suspect contamination	6		
Jan 22, 97	EW 12	OV = >50 ppm		9	
Jan 23, 97	EW 12	OV = >50 ppm		7	
Jan 26, 97	EW 12	suspect contamination	4		
		r of January Upgrades	11	71	4
	Total Cos	t of January Upgrades	\$260.59	\$3,491.07	\$520.00

February Cost of PPE Upgrades

Date	Activity	H&S	Number of PPE Upgrades		
		Concern	Mod D	Level C	Level B
Feb 7, 97	EW 11	OV = >5 ppm		· 9	2
Feb 9, 97	EW 11	OV = 220 ppm		5	2
Feb 19, 97	EW 13 Refuse Removal	OV = 76 ppm		6	
Feb 20, 97	EW 13	OV = 90 ppm	2] '	
Feb 26, 97	EW 13	OV = 68 ppm		5	
 -	Total Number	of February Upgrades	2	25	4
	Total Cost	of February Upgrades	\$47.38	\$1,229.25	\$520.00

March Cost of PPF Upgrades

Date	Activity	H&S	Nun	nber of PPE	Upgrades
		Concern	Mod D	Level C	Level B
Mar 5, 97	EW 13	OV = < 5 ppm		3	
Mar 6, 97	PGCS 1/EW 12	OV = 2 ppm	4		
Mar 7, 97	EW 12	sus pect contamination	2		·
Mar 8, 97	EW 12	suspect contamination	2	1	•
,	EW 13	suspect contamination		6	
		OV = 4 ppm	5	5	1
Mar 21, 97		OV = 14 ppm		6	
Mar 22, 97		OV = 11 ppm	1	7	
Mar 23, 97		OV = 2 ppm	5	6	
	1	OV = 3 ppm	7	4	
Mar 25, 97	EW 15/ EW 16	OV = 3 ppm	3	5	
Mar 26, 97	EW 10	OV = < 5 ppm	7		
Mar 27, 97	EW 10/EW 17/EW 18	OV = 47 ppm	4	6	
			40	48	1
	Concern Mod D Level C Le ar 5, 97 EW 13 OV = < 5 ppm		\$130.00		

April Cost of PPE Upgrades

Date	Activity	H&S	Number of PPE Upgrades									
	·	Concern	Mod D	Level C	Level B							
Apr 2, 97	Manhole Installation	suspect contamination	3									
Apr 5, 97	Manhole Installation	suspect contamination	2									
Apr 6, 97	Manhole Installation	suspect contamination	1									
Apr 14, 97	Manhole Installation	suspect contamination	4									
Apr 15, 97	Manhole Installation	suspect contamination	4									
	or 5, 97 Manhole Installation suspect contaminator 6, 97 Manhole Installation suspect contaminator 14, 97 Manhole Installation suspect contaminator 15, 97 Manhole Installation suspect contaminator Total Number of April Upgra		14	0	0							
	Tota	I Cost of April Upgrades	\$331.66	\$0.00	\$0.00							

Estimated Cost of PPE Upgrades to Complete Extraction Well Installation

Date	Activity	H&S	Number of PPE Upgrades								
		Concern	Mod D	Level C	Level B						
NA	EW 14 Installation	suspect contamination		16							
NA	EW 14 Manhole Installation	suspect contamination		3							
NA	Develop Wells	suspect contamination		2							
NA	Set Pumps	suspect contamination	12]							
NA	Complete	suspect contamination	9								
NA	Set Piping	suspect contamination		12							
	Total Number of	Estimated Upgrades	21	33	0						
	Total Cost of	Estimated Upgrades	\$497.49	\$1,622.61	\$0.00						

Accumulate Total Cost for Extraction Well Installation PPE Upgrades \$11,957.81

HORIZONTAL TECHNOLOGIES, INC. DAILY COST FOR EXTRACTION TRENCH PPE UPGRADE

Labor:	*Daily Cost	Allocation	n Total	
Officer	\$480.00	0.5	\$240.00	
Project Manager	\$437.00	0.5	\$218.50	
Supervisor	\$326.00	1.0	\$326.00	
Trencher Operator	\$277.00	1.0	\$277.00	
Ground Support	\$245.00	1.0	\$245.00	
Operator	\$245.00	1.0	\$245.00	•
Operator	\$518.00	1.0	\$518.00	•
Operator	\$518.00	1.0	\$518.00	
Sub-Total	\$3,046.00		\$2,587.50	\$2,587.50
Equipment:	Daily Standby Rate			
Trencher 6006	\$600.00	1.0	\$600.00	
Loader	\$150.00	1.0	\$150.00	
Loader	\$150.00	1.0	\$150.00	
Mech. Truck	\$75.00	0.5	\$37.50	
Vehicle	\$50.00	1.0	\$50.00	
Vehicle	\$50.00	1.0	\$50.00	
Vehicle	\$50.00	1.0	\$50.00	
Welders/Cutters	\$50.00	0.5	\$25.00	·
Small Tools	\$65.00	1.0	\$65.00	
D-5H	\$316.25	0.5	\$158.13	
973 Loader	\$589.38	0.5	\$294.69	
Cat 250 Hauler	\$428.38	1.0	\$428.38	
Cat 250 Hauler	\$428.38	0.5	\$214.19	
Sub-Total	\$3,002.39		\$2,272.89	\$2,272.89
Other:				
Warehouse/Utilities	\$285.00	0.5	\$142.50	
Rental Cars	\$150.00	0.5	\$75.00	
Health & Safety	\$308.00	0.5	\$154.00	
Airfare	\$420.00	0.5	\$210.00	
Sub-Total	\$1,163.00		\$581.50	\$581.50
			Daily Total	\$5,441.89
			5% OH	\$272.09
			10% Profit	\$571.40
			Sub-Total	\$6,285.38
		•	Hourly Cost	\$698.38
•			Additional Hrs	45
			TOTAL COST	\$31,426.89

^{*} Cost includes Meals, Housing, Taxes, Insurance and Benefits
One Hour Allowed for Morning Dress-Out, Lunch De-con and Re-Dress, and Evening Decon
Note: PPE Disposal by Others

Force Majeure: Costs Associated with Union Strikes Change Order Request # 400-004

HORIZONTAL TECHNOLOGIES, INC.

Force Majeure

Cost Report January Februray March

Employee:				Total	Applied	Cost		Total
Officer	7	28	5	40	0.5	\$ 480.00	\$	9,600.00
Project Manager	7	28	5	40	0.5	\$ 437.00	\$	8,740.00
Supervisor (Box)				0	. 0	\$ 354.00	\$	-
Supervisor (Ground)				0	0	\$ 326.00	\$	-
Supervisor (Mixing)				0	Đ	\$ 270.00	\$	-
Trencher Operator				0	0	\$ 298.00	\$	-
Ground Support				0	0	\$ 244.80	\$	-
Bentonite Dry				0	0	\$ 277.00	\$	
Operator			•	0	0	\$ 245.00	\$	-
Truck Driver				٥	0	\$ 245.00	\$	-
Safety Person				0	0	\$ 340.00	\$	-
Operator	•			0	0	\$ 518.00	\$	-
Operator				0	0	\$ 518.00	\$	-
Labor				0	0	\$ 245.00	\$	-
Labor				0	0	\$ 245.00	\$	
					· ·		_	40 240 00

Sub-Total \$ 18,340.00

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Εα	111	-	m	•	nt

Equipment						-	050.00	 00 000 00
Trenchr 6006	/	28	5	40	1	\$	650.00	\$ 26,000.00
Cat 231 Backhoe				0	1	\$	275.00	\$ -
Loader	7	28	5	40	1	\$	150.00	\$ 6,000.00
Mixer				0	1	\$	150.00	\$ -
Mech. Truck	7	28	5	40	0.5	\$	75.00	\$ 1,500.00
Vehicle	7	28	5	40	0.5	\$	50.00	\$ 1,000.00
Vehicle				0	1	\$	50.00	\$ -
Vehicle				0	1	\$	50.00	\$ -
Vehicle				0	1	\$	50.00	\$ - }
Tractor Pete				0	1	\$	160.00	\$ - 1
Welders/Cutters				0	1	\$	50.00	\$ -
Small Tools	7	28	5	40	0.5	5	65.00	\$ 1,300.00
IR Forklift				0	1	\$	145.25	\$ -
Nissan Forklift				0	1	\$	73.89	\$ -
D-5H	7	28.	5	40	0.5	\$	316.25	\$ 6,325.00
Cat 250 Hauler				0	1	\$	428.38	\$ -
Hitachi LC300	7	28	5	40	0.5	\$	460.00	\$ 9,200.00
Compressor				0	1	\$	33.06	\$ -
Generator				0	1	\$	46.00	\$ -
Drop Deck Trailer				0	1	\$	25.88	\$ -
Tanker				0	1	\$	54.63	\$ -
Tanker				0	1	\$	54.63	\$ -
Poly Tank				0	1	\$	56.35	\$ - !
Poly Tank				0	1	\$	56.35	\$ -
Crane				0	1	\$	261.63	\$ - (
								 £4.30£.00

\$ 51,325.00

Parts:

Cutters	0 \$ 31.00 \$ -
Ploywall/Bentonite	0 \$ 2,600.00 \$ -
ldler	0 \$ 1,000.00 \$ -
Boits/Nuts	0 \$ 1.49 \$ -
61.7.1	

Sub-Total

Other:							
Warehouse/Utilities	7	28	5	40	0.5 \$	285.00	\$ 5,700.00
Rental Cars	7	28	5	40	0.5 \$	150.00	\$ 3,000.00
Airfare		4		4	0.5 \$	420.00	\$ 840.00
QA/QC - FW				0	\$	721.77	\$ -
F-W Expense				0	. \$	120.68	\$ -
Sub-Total		·					\$ 9,540.00

 Sub-Total
 \$ 79,205.00

 5% OH
 \$ 3,960.25

 10% Profit
 \$ 8,316.53

 TOTAL
 \$ 91,481.78

Costs Associated with Delays and Standby for Hazardous Buried

Drums along Barrier Wall Alignment near Station 34+00

Change Order Request # 400-010

HORIZONTAL TECHNOLOGIES

Providing Innovative Solutions to Subsurface Environmental Challenges

May 20, 1997

Todd A. Lewis Construction Manager Montgomery Watson Constructors, Inc. 2100 Corporate Drive Addison, Illinois 60101

RE: American Chemical Services, Inc. NPL Site - Griffith, Indiana

Request for Change Order for Conflict with Barrels at Station 34+00 +/-

Dear Mr. Lewis:

This letter is to request a change order to compensate Horizontal Technologies for time lost due to conflicts with a barrel disposal area along the alignment of the barrier wall installation. As you were notified in writing on the 10th of April (date of conflict), HTI encountered numerous barrels containing unknown substances at approximately Station 34+00.

Air Monitoring with our PID's reflected levels exceeding the permissible PPE levels associated with Level "C" protection. It was decided that crews would proceed west of the area approximately one-hundred feet and return the trencher into the ground in hope additional barrels would not be encountered. Although this reasoning proved correct, HTI sustained lost time and production associated with this condition.

HTI hereby requests that MWCI issue a change order for the following amount to compensate for these costs as well as a time extension of one day.

HT1 Crew Cost (Associated with Slurry Wall Installation)	\$3,545.47
5% Overhead	\$ 177.27
3% Bond	\$ 111.68
10% Profit	\$ 383.44
TOTAL	\$4,217.86

If you have any questions, please contact me.

Respectfully,

George A. Powell Project Manager

cc: Ben McGeachy, MWCI

Don Justice, HTI Greg Rawl, HTF

4767 Pine Island Rd. N.W., Matlacha, Florida 33993

941/283-5640 Fax: 941/283-2222

Costs Associated with Delays and Standby for the
Northern Barrier Wall Alignment Change
Change Order Request # 400-019

HORIZONTAL TECHN	IOI OGIES I	NC												_			_							
Realignment Standby		,	 							ļ							 							
realignment of union)	Cirai Re		 								_			 —			 							
Employees:	Daily Cost	40%	T	Total		LA	H	lousing	Total	Friday	S	ub-Total	Saturday	S	ub-Total	Sunday	Sι	ıb-Total	Monday	Su	o-Total	Tuesday	Sul	b-Total
Mark Justice	\$_300.00	\$ 120.00	\$_	420.00	\$	25.00	\$	35.00	\$ 480.00		\$	•		\$			\$	-		\$		1	\$	480.00
George Powell	\$ 269.23	\$ 107.69	\$	376.92	\$	25.00	\$	35.00	\$ 436.92	0.5	\$	218.46	1	\$	436.92	1	\$	436.92	0.5	\$	218.46	1	\$	436.92
Johnny Edwards	\$ 210.00	\$ 84.00		294.00	\$	25.00	\$_	35.00			\$			\$			\$			\$	-		\$	-
Garnet McCurdy	\$ 190.00				\$	25.00		35.00			\$			\$			\$			\$_			\$	
Phillip Procell	\$ 150.00			210.00	\$_	25.00		35.00		<u> </u>	\$			\$			\$			\$	-		\$	
Straley Melvin	\$ 170.00	\$ 68.00		238.00	\$	25.00			\$ 298.00		\$:		\$			\$			\$_		1	\$	298.00
Randy Rebarchek	\$ 135.00				\$	25.00		35.00		<u> </u>	\$			\$			1.5			\$_			\$	
David Kelting	\$ 200.00			280.00	\$	25.00	\$_		\$ 340.00	0.5		170.00	11	\$	340.00	1	\$	340.00	0.5	-	170.00	1	\$	340.00
Craig McMicken	\$ 135.00	\$ 54.00		189.00	\$	25.00	\$	35.00	\$ 249.00		\$		 	\$			\$:_	ļ	\$	-		\$	•
Wilfredo Jeminez	\$_155.00	\$ 62.00		217.00	\$_	25.00		35.00		ļ <u> </u>	\$		ļ	\$			\$_	•		\$		1	\$	277.00
Rodney McCurdy	\$ 135.00			189.00	\$	25.00		35.00			\$		ļ	\$			\$.		\$			\$	-
Sean Powell	\$ 93.75			131.25	\$	25.00	\$	35.00	\$ 191.25		\$		11	\$	191.25	1	\$	191.25	11	\$_	191.25	1	\$_	191,25
Glen Beaver	\$ 135.00			189.00	\$	25.00	\$	35.00		ļ <u>.</u>	\$		l	\$			\$	<u> </u>	ļ	\$			\$	<u> </u>
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Sub-Total	\$ 2,277.98	\$ 911.19	2	3,189.17	3	325.00	\$	455.00	\$ 3,989.17	ļ	\$	388.46		\$	968.17		\$	968.17	ļ	3	679.71		\$	2,023.17
On-Site:	Per Day	Quantity	+				-		Total		-		 	├—			+-		 -	 		ļ		
Operators	\$ 302.98				 		-		\$ 302.98	 	1-						╁		 	}		 	-	
Labors	\$ 247.34		; —				-		\$ 494.68					-			+			1				
Sub-Total			1-		 		-		\$ 797.68	·	† -		 	-		ļ	+-			-		 		
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Operators	\$ 531.88		i						\$ 531.88	1	\top		1	T						1				
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- CUDICEUT		m-4:	-	500	┝-	otal SB	L.	7-4-111	 	ļ.——	 		 	-					ļ			ļ	 	
EQUIPMENT: Trencher	Eguip. No.	Rate \$ 600.00	-	FOG 125.00		600.00	\$	Total Use 725.00	ļ		\$	600.00	 	\$	600.00		1 5	600.00	 	\$	600.00	ļ <u>-</u>	Š	600.00
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Trencher		\$ 730.00		65.00		225.00	\$	290.00	 	 '	s		 	\$			5		 	\$	750.00		\$	750.00
Cat 231 Backhoe		\$ 275.00		75.00		275.00				 ,	\$		 	\$	275.00	 	\$		1	+	275.00	1	\$	275.00
Cat 936 Loader		\$ 150.00		35.00		150.00	\$				\$		 	\$			1 \$			+	150.00		\$	150.00
Kawasaki Z60	10001			35.00		150.00	\$	185.00		- 	İŝ			\$;	i s			15	,00,00		\$	150.00
Cat 426 BH/Loader	7008	- 		18.00		60.00	\$	78.00		1	5		 	\$		<u>'</u>	1 5			\$	60.00		s	60.00
Peterbilt	3020			30.00		80.00	<u> </u>			1 1	\$		1	S S		 	1 8			\$	60.00			80.00
Mixer	2100			20.00		75.00	\$		\ 	Ţ	\$			\$	75.00	i	1 \$			\$	75.00		\$	75.DC
Polywall Box		\$ 150.00			\$	150.00				1	\$			\$		1	1 5			\$	150.00		\$	150.00
Polywall Box		\$ 150.00			\$	150.00	\$	150.00			\$			\$			\$	-		\$	-	1	\$	150.00
Mechanic Truck	301	\$ 75.00	\$	12.00		75.00					\$	75.00]1	\$	75.00		1 \$	75.00	11	\$	75.00	1	\$	75.00
GMC Sonoma	2019			12.00		75.00					\$			\$			\$			\$		1	\$	75.00
Ford F-350	3018			8.00		50.00				<u> </u>	\$		<u> </u>	\$			\$			\$			\$	•
Ford F-150 4x4	202			8.00		50.00					\$			\$			\$			\$		ļ	\$_	<u> </u>
Ford Bronco	1004			8.00	+-	50.00					\$			 \$	50.00	11	1 \$	50.00	0.5	\$	25.00	1	\$_	50.00
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Ford Ranger P/U	1 202	2 \$ 50.00) I S	8.00	1 \$	50.00	1 \$	58.00	1	1 .	S		1	S		1	1.5	_	1	1.8	-	1	ł \$	_

Welders/Tanks		\$ 50.0	۸۱	\$ 8.00		50.00	\$ 58.00	· · · · · · · · · · · · · · · · · · ·	· · · · ·	\$		11	-	50.00	- 41	-	50.00		٠,			41.6		50.00
Blue Lincoln	10008			\$ 8.00					·	- \$ -	50.00			50.00		<u></u>	50.00		4			1 \$		50.00
Gold Lincoln	10009						\$ 58.00			÷	50,00	1		50.00		\$	50.00		-	<u> </u>		1 \$		
	10009	\$ 30,0	<u>-</u>	\$ 0.00		3,265.00				-3	2 055 00		\$	04500					_	5 -		1 5		50.00
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Rental Equipment:	Port, Tool	\$ 145.2	_	\$ 6.00	\$	145.25	\$ 151.25		 	Š			-	145.25		-	4.45.05		4	445.05				145.05
IR Forklift Grove Crane	Central	\$ 258.7												258.75		<u> </u>				\$ 145.25		1 5		145.25 258.75
D-5H LPG		\$ 316.2							 	\$:+								\$ -		1 \$		
	Patten				+ <u>-</u>				 	\$:+		316.25		\$			1			1 \$		316.25
Hitachi EX300LC	Howell	\$ 460.0							<u> </u>	- <u>\$</u> -		:+		460.00		_:_				\$		1 \$		460.00
Cat 259 Hauler	Patten	\$ 428.3								\$!+	\$	428.38		\$			1			1 \$		428.38
Compressor	Port. Tool	\$ 33.0		\$ 15.00						\$			<u>\$</u>	33.08		\$				\$ 33.06		1 5	_	33.06
Carbon Filter	Carbonair	\$ 50.0			\$					\$!	<u>\$</u>	50.00		\$				\$ -		- \$:_
Tanker	Express	\$ 54.6			\$		\$ 54.63		·	\$!	<u>\$</u>	54.63	1					\$ 54.63		1 5		54.63
Tanker	Express	\$ 54.6			\$				ļ <u>1</u>	\$		1	\$	54.63	1				1			1 5		54.63
Poly Trailer Tank	Baker	\$ 56.3			\$				1	\$		1	\$	56.35	1	— <u>:</u>			1			1 5		56.35
Poly Trailer Tank	Baker	\$ 56.3			\$				<u>-</u> 1	.\$	56.35	1	<u>.</u> \$	56.35	1	-÷			1			1 5		56.35
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Baker Tank	Baker	\$ 56.3			\$				ļ	\$	·		\$			\$				\$ -				
Baker Tank	Baker	\$ 56.3			1.5					\$		lİ	\$			\$				\$		_ !	_	
Steam Cleaner	Great Lake	\$ 71.8	38	\$ 3.00	1	71.88		8		\$		1	\$	71.88	1	\$			1	\$ 71.88		113		71.88
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Misc.:		<u> </u>			-							l				L.			_			_		
Warehouse	Austgen	\$ 60.0			1				11	\$		1	\$	60.00	1	\$				\$60.00		1 3	·	60.00
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Airfare	<u> </u>	\$ 420.0	00		1_				0.2	\$	84.00	0.5	\$	210.00	1	\$	420.00		1	\$ 420.00		1 :	\$	420.00
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TOTAL WIFOG								\$ 12,338.68]	Ι						Γ			T					
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TOTAL W/O FOG		T .			Τ.			\$ 11,355.68		\$	4,325.13		\$ 5,	,196.09		\$	5,131.09			\$ 4,867.53			\$	7,379.74
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FOSTER-WHEELER		Per Da	y		T					1						Γ			T		<u> </u>			
Quality Control		\$ 721.		ea.	Т				1	\$	721.77	1	\$	721.77	1	\$	721.77		1	\$ 721,77		1	\$	721.77
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Lodge/Meals/Misc.	1	\$ 120.0	68	ea.	Т				1	Ťŝ	120.68	1	\$	120.68	1	5	120.68	 	1	\$ 120.68	1	1	\$	120.68
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	- - -		\neg		1			Sub-Total		\$	5,167.58		\$ 6	,038.54		5	6,973.64	1		\$ 5,509.98			\$	8,222.19
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<u> </u>					7		<u> </u>	25% Profit			1,356.49			,585.12			1,568.05			\$ 1,446.37			\$	2,158.33
I————	·				1	• • • • • • • • • • • • • • • • • • • •		TOTAL			6,782.45			925.59			7,840.27		寸	\$ 7,231.85			\$ 1	0,791.63
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Costs Associated with PCB Contaminated Soils Removal and Fill Replacement for PGCS 3

Change Order Request # 400-006



February 26, 1997 Providing Innovative Solutions to Subsurface Environmental Challenges

Todd A. Lewis Sr. Construction Management Engineer Montgomery Watson Constructors, Inc. 2100 Corporate Drive Addison, Illinois 60101

Re:

Change Order Request for PCB Soils Removal - PGCS Extraction Trench

American Chemical Services, Inc. - NPL Site

Dear Todd:

This letter is to request a change order for work associated with the directive by MWCI to remove PCB contaminated soils along the PGCS installation corridor.

Prior to the installation of the PGCS trenches, MWCI requested that HTI excavate and remove the area of PCB contaminated soils. This area was excavated using a Cat 231 Excavator and the spoils were loaded into the bucket of a Kawasaki I65 front-end loader and stockpiled in an open area adjacent to the excavation area. Excavated, stockpiled soils were subsequently covered with off-site borrow to form a cap.

Additional off-site borrow was imported to refill the excavated areas using both the front-end loader as well as a Cat 973 Track Loader. Supervision was provided as necessary.

For this change. HTI is requesting the following costs be included into a formal change order for immediate approval:

Equipment \$ 2.016.08 Labor \$ 1,235.10 Borrow (Off-site) \$ 1,690.00

TOTAL This Change \$ 4,941.18

Please note that this price does not include transport of spoils materials to the Spoils Management Areas. Please add \$800.00 for transport as required.

If you have any questions, please do not hesitate to contact me.

Respectfully,

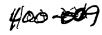
George "Andy" Powell Project Manager

cc: Do:

Don Justice Greg Rawl Costs Associated with Dewatering near Underground Drain Tiles for Water Line Crossing

Change Order Request # 400-009

HORIZONTAL TECHNOLOGIES



Providing Innovative Solutions to Subsurface Environmental Challenges

May 20, 1997.

Todd A. Lewis Construction Manager Montgomery Watson Constructors, Inc. 2100 Corporate Drive Addison, Illinois 60101

RE:

American Chemical Services NPL Site - Griffith, Indiana Request for Change Order - 8" Water Main Dewatering

Dear Mr. Lewis:

This letter is to request a change order to compensate Horizontal Technologies for unforeseen conditions associated with the removal of an existing eight inch water main on the above referenced project. As you were notified verbally on April 8th as well as by letter on April 10th, HTI attempted to remove the aforementioned water main on the 8th of April unsuccessfully due to several clay drain tiles in close proximity conveying large volumes of groundwater into the excavation.

After spending the greater part of the day attempting the removal, supervisors from HTI decided to abandon further attempts until an adequate dewatering system could be installed and sufficient storage capacity were secured. The following day crews proceeded north of the water main and again began installation of the slurry wall.

Subsequent to the above actions, HTI contracted with Griffin Dewatering to install a wellpoint dewatering system and the water storage tank was removed from the site until future attempts could be initiated. Prior to the installation of Polywall in that area, dewatering pumps will be started and tanks again brought on-site to facilitate settlement of suspended solids prior to being discharged through the existing conveyance piping into the new treatment facility.

Following are costs associated with this request:

1. Baker Tank Move (In and Out)		\$ 536.00
2. Griffin Dewatering (Install, Pump Rental)		\$ 3,600.00
3. Operate and Remove Dewatering System		\$ 1,050.00
4. April 8th (Crew, Equipment, Material)	•	\$ 8,109.14
Sub-Total		\$13,295.14
5% OH		\$ 664.76
3% Bond		\$ 418.80
10% Profit		1,437.87
TOTAL		\$15,816 57

Additionally, please include with this change a time extension of two days to cover lost time and production. If you have any questions, Please contact me.

Respectfully,

George A. Powell Project Manager

cc:

Ben McGeachy, MWCI Don Justice, HTI

Greg Rawl, HTI

Costs Associated with Additional Permeability Testing for Barrier Wall Construction

Change Order Request # 400-013

HORIZONTAL TECHNOLOGIES

Providing Innovative Solutions to Subsurface Environmental Challenges

May 20, 1997

Todd A. Lewis
Construction Manager
Montgomery Watson Constructors, Inc.
2100 Corporate Drive
Addison, Illinois 60101

RE:

American Chemical Services, Inc. NPL Site - Griffith, Indiana

Request for Change Order - Increased Frequency of Permeability Testing

Dear Mr. Lewis:

This letter is to request compensation for costs associated with additional testing of slurry wall permeability. As requested by Montgomery Watson, HTI has submitted samples to J&L Testing for increased frequency in tests for slurry wall installation.

Additional samples were collected by representatives of Foster Wheeler Environmental, shipped to the lab for analysis and results have been forwarded to your office. In all ten additional tests were required. Following are costs associated with this request:

 J&L Testing 	10 Tests	@	\$260.00	\$2,600.00
Foster Wheeler Collection	1 LS	@	\$421.23	\$ 421.23
3. Shipping	1 LS	<u>a</u>	\$ 74.00	\$ 74.00
Sub-	Total			\$3,095.23
5% (Overhead			\$ 154.76
3% I	Bond			\$ 97.50
10%	Profit :			\$ 334.75
TOT	AL			\$3,682.24

If you have any questions, please contact me.

Respectfully

George A Powell Project Manager

CC:

Ben McGeachy, MWCI Don Justice, HTI Greg Rawl, HTI John Gandee, FWE Force Majeure: Costs Associated with Extream Weather Event
Change Order Request # 400-023

Horizontal Technologies, Inc.

FORCE MAJEURE - EXCESSIVE RAIN/FLOOD

EASTERN RAILROAD INSTALLATION

96-104 / 400-023]]		١٢] [٦	
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		RATE	41	06/23/97		06/24/97	Ľ	06/24/97		TOTAL	4	TOTAL
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OFFICER	1	\$480.00	H	1.00	Н	1.00	-	1.00	H	3.00	ᅪ	\$1,440.00
PROJECT MANAGER	_ 2	\$437.00	Н	1.00	H	1.00	_	1.00	H	3.00	ᅪ	\$1,311.00
SUPERVISOR BOX	_ 3	\$354.00	H	1.00	Н	1.00	╬	1.00	H	3.00	┢	\$1,062.00
SUPERVISOR GROUND	4	\$326.00	Н	1.00_	Н	1.00		1.00	닏	3.00	┢	\$978.00
SUPERVISOR MIXING	5	\$370.00	Н	1.00_	Н	1.00	-	1.00	-L	3.00	上	\$1,110.00
TRENCHER OPERATOR	6	\$298.00	H	1.00	Н	1.00	-L	1.00	-L	3.00	╌	\$894.00
GROUND SUPPORT	7	\$244.80	Н	1.00	H	1.00	-	1.00		3.00	₽	\$734.40
BENTONITE DRY	∫ 8	\$277.00	Н	1.00	H	1.00	- _	1.00		3.00	ᅪ	\$831.00
OPERATOR	9	\$245.00	Н	1.00	H.	1.00	┺	1.00	- _	3.00	H	\$735.00 -
TRUCK DRIVER	10	\$245.00	Н	1.00	H	1.00	┺	1.00	┧	3.00	H	\$735.00 - 1
SAFETY PERSON	11	\$340.00	H	1.00	H	1.00	┖	1.00	-	3.00	H	\$1,020.00 - 1
OPERATOR	12	\$518.00	H	1.00	Н	1.00	_	1.00	-	3.00	Н	\$1,554.00 - 1
OPERATOR	13	\$518.00	H	1.00	-	1.00	┺	1.00	- _	3.00	\vdash	\$1,5<u>5</u>4.00 – 1
LABOR	14	\$245.00		1.00	Н	1.00	_	1.00	┫	3.00	H	\$735.00 1
LABOR	15	\$245.00	\vdash	1.00	-	1.00	-	1.00	1	3.00	H	\$735.00 - 1
TOTAL LABOR	16		\vdash				-		-L		<u>}-</u> }	\$15,428.40 – 1
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TRENCHER 06-006	18	\$650.00	[1.00		1.00	Ł	1.00	-L	3.00	H	\$1,95 0.00 - 1
CAT 231 BACKHOE	19	\$275.00	HL	1.00	-[1.00	┺	1.00	-[3.00	Н	\$825.00 - 1
LOADER	20	\$150.00	H	1.00	[1.00	┖	1.00	-	3.00	\vdash	\$450.00 - 2
MIXER	21	\$150.00	[1.00		1.00	┺	1.00	- _	3.00	H	\$450.00 - 2
MECH. TRUCK	22	\$75.00	-	1.00	-	1.00	-	1.00	- _	3.00	Н	\$225.00 - 2
VEHICLE	23	\$50.00		1.00	-	1.00	┺	1.00	- _	3.00	Н	\$150.00 - 2
VEHICLE	24	\$50.00	- _	1.00	-	1.00	┨	1.00	-L	3.00	Н	\$150.00 - 2
VEHICLE	25	\$50.00	-	1.00	- _	1.00	1_	1.00	- _	3.00	Н	\$150.00 - 2
TRACTOR PETE	26	\$160.00	-[1.00	-	1.00	L	1.00	-L	3.00	Н	\$480.00 - 2
WELDERS CUTTERS	27	\$50.00	[0.00	-	0.00	┖	0.00	L	0.00	Н	\$0.00 - 2
SMALL TOOLS	28	\$65.00	-L	0.00		0.00	_	0.00	Ł	0.00	H	\$0.00 - 2
IR FORKLIFT	29	\$145.25	-[1.00	Ł	1.00	L	1.00	ŀL	3.00	H	<u>\$435.75</u> – 2
NISSAN FORKLIFT	30	\$73.89	-[1.00	-[1.00	E	1.00	-L	3.00	H	\$221.67 - 3
D-5 H	31	\$316.25	-[1.00	-[1.00	L	1.00	Ŀ	3.00	H	\$948.75 - 3
CAT 250 HAULER	32	\$428.38	-[1.00	-[1.00	Ĺ	1.00	-[3.00	H	\$1,285.14 - 3
HITACHI LC300	33	\$460.00	-[1.00	-[1.00	L	1.00	-	3.00	H	\$1,380.00 - 3
COMPRESSOR	34	\$33.06	[1.00	-[1.00		1.00	-[3.00	H	\$99.18 - 3
GENERATOR	35	\$46.00	-[1.00	-[1.00	[[1.00	-[3.00	[\$138.00 - 3
DROP DECK TRAILER	36	\$25.88	-[1.00	-[1.00	Г	1.00	-	3.00	Н	\$77.64 - 3
TANKER	37	\$54.63	7	1.00	-[1.00	[1.00	-[3.00		\$163.89 3
TANKER	38	\$54.63	-[1.00	-[1.00	Γ	1.00	₽	3.00	-[\$163.89 - 3
POLY TANK	39	\$56.35	_	1.00 -	-[1.00	Γ	1.00		3.00	╁	\$169.05 - 3
POLY TANK	40	\$56.35	_ _	1.00	-	1.00 _	Γ	1.00	┞	3.00		\$169.05 - 4
CRANE	41	\$261.63	╀	1.00	-	1.00		1.00		3.00		\$784.89 4
TOTAL EQUIPMENT			1		╀		Γ		_		_5	10,866.90 - 4
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WAREHOUSE	44	\$285.00	_	1.00	-	1.00		1.00	Γ	3.00		\$855.00 4
RENTAL CARS	45	\$150.00	_ _	1.00	_	1.00	-	1.00	┞	2.00		\$450.00 - 4

Horizontal Technologies, Inc. FORCE MAJEURE - EXCESSIVE RAIN/FLOOD EASTERN RAILROAD INSTALLATION 96-104 / 400-023 RATE 06/23/97 06/24/97 06/24/97 TOTAL TOTAL HOURS VALUE TOTAL OTHER 46 \$1,305.00 46 47 47 48 49

SUB TOTAL 50

10% PROFIT 52

TOTAL 54

53

55

5% OVERHEAD 51

49

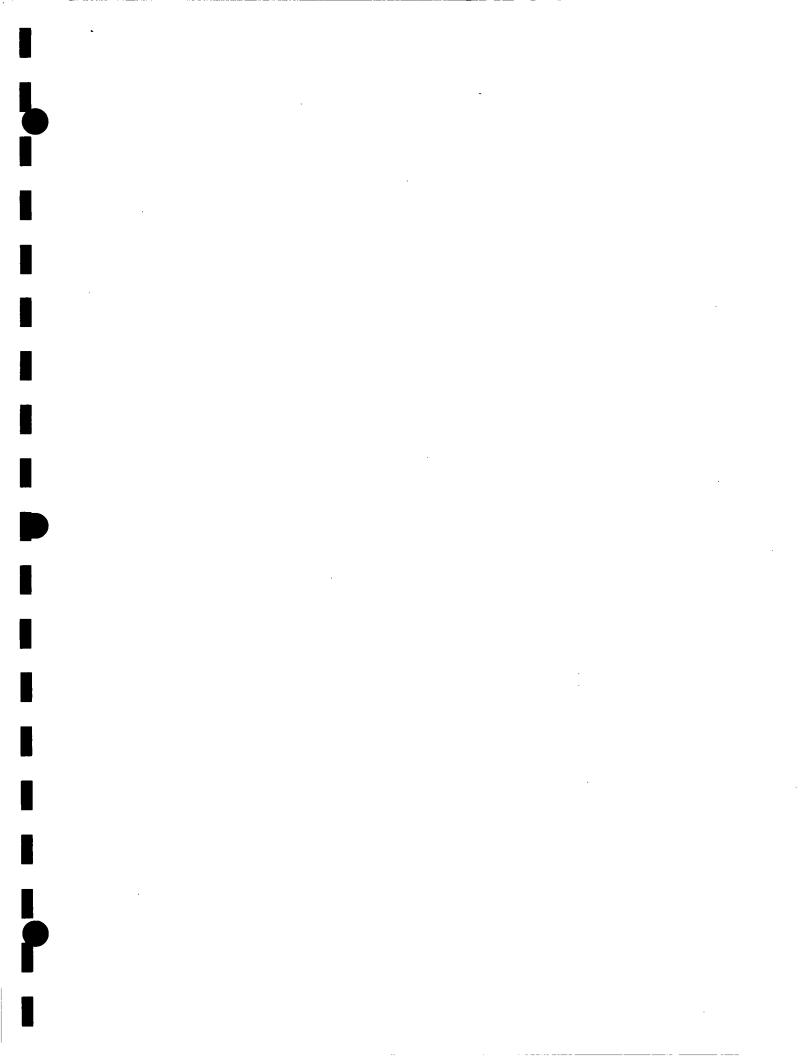
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\$27,600.30 - 50

1,380.02 - 51

2,898.03 - 52

\$31,878.35 - 54



SUMMARY OF CHANGE ORDER REQUESTS BY HORIZONTAL TECHNOLOGIES, INC. FOR MWCI PERTAINING TO THE ACS PRP PROJECT

Item	Description of Requested Change Order	Additional Time Extension Requested (Days)	Additional Funds Requested
A	Additional Refuse Removal		
	-off-site area		\$164,325.00
	-standby for off-site removal		\$30,246.21
	-on-site removal		\$12,779.07
	-fill purchased by MWCI		\$28,200.00
	-fill purchased by HTI		\$19,500.00
	-cost for fill placement by HTI	•	\$61,656.54
		35	\$316,706.82
В	Subsurface Rock		
	-southeast area		\$39,115.97
	-northwest area		\$65,887.09
	-equipment repair		\$126,766.39
	-slurry wall/pretrenching		\$90,621.00
	-railroad track		\$84,143.19
	-closures between panels		\$64,128.00
		49	\$470,661.64
C	PPE Upgrades		
	-barrier wall		\$159,428.83
	-extraction trenches		<u>\$43,384.70</u>
		17	\$202,813.53
D .	Union Interference	47	\$91,481.78
E	Delay for Drums in Polywall		
	Alignment near 34+00	1	\$4,217.86
F	Delay for N. Barrier Wall		
	Alignment Change	<u>5</u>	<u>\$40,571.79</u>
	SUBTOTALS	154	\$1,126,453.42
	3% Bond Fee for Additional Amount		\$33,793.60
	TOTALS	154	\$1,160,247.02

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February 11, 1997

Mr. George "Andy" Powell Horizontal Technologies, Inc. 4767 Pine Island Rd., NW Matlacha, FL 33993

Subject: February 7, 1997 Meeting - ACS site

Dear Mr. Powell,

This letter is intended to formalize and document the position of MWCI and the Group regarding the topics discussed during our meeting on February 7, 1997 at our office. The purpose of the meeting was to discuss the barrier wall project and certain items that have impacted the cost and progress of the project. For the record, the attendees at the meeting were:

- Mr. Mark Travers from de maximus
- Peter Vagt from MWA
- Joe Willich from MWCI
- Todd Lewis from MWCI
- · Greg Rawl from HTI
- Mark Justice from HTI
- Andy Powell From HTI

The items discussed are listed below, with the response given by MWCI:

Item 1

HTI requested additional funds be awarded for a change in conditions to remove refuse that had not been specifically identified by the bid documents or the design documents prepared by Foster Wheeler. The refuse removal is required to complete the installation of the barrier wall according to the design documents and within the capabilities of HTI trenching equipment.

MWCI denied HTI's request for additional funds. The bid and contract documents specifically placed the responsibility for knowledge of site conditions, or a description of what would constitute a change of conditions, upon HTI. Many other provisions in the contract documents required HTI to assure that they had an understanding of the work to be performed and that their bid considered the difficulties the work would need to overcome. Although HTI took exception to other requirements of the bid, they took no exception to these provisions. Furthermore, the bid documents describe the use of the site as being subject to inappropriate disposal of waste or refuse for at least 20 years, Therefore, to now claim that refuse was not reasonably foreseeable at the site is not consistent with the known history of the site.

Item 2

HTI requested additional funds be awarded for refuse removal to install the BWES extraction trenches. The justification presented is essentially the same as Item 1. MWCI's response is also the same as Item 1.

Item 3

HTI requested that additional funds be awarded for providing level "C" personal level of protection for its workers. The bid from HTI specifically provided for limited personal protective equipment (PPE) based on the expected conditions of the work.

MWCI agreed with HTI's claim that additional funds were justified to provide an increased level of protection for its workers. A formal agreement for awarding additional funds will need to be finalized, based on the increased effort and cost to HTI for providing their services. It is expected that this agreement will be finalized in the next week.

Item 4

HTI requested that a contract time extension be granted. The current contract time to substantially complete the barrier wall is 2/28/97. The justification provided by HTI for the time extension was HTI's difficulties in securing subcontracted services and materials to complete the work and the additional refuse removal not anticipated by HTI (Item 1&2). HTI also cited difficulties with the subcontracted services and material suppliers have been compounded by a labor dispute at the site as a further factor.

MWCI denied a time extension for the work to be completed. Time extensions to complete the work have been generously granted in the past to allow HTI to overcome difficulties being experienced (completion date was 1/15/96). Additionally, significant delays, within the control of HTI, have repeatedly delayed the start date of the barrier wall. Now that the start of construction of the barrier wall has revealed work that HTI did not anticipate, the responsibility for the work should not be MWCI's or the Group, including the time of performance associated therewith.

With regard to time extensions for performing the work in level "C" PPE, MWCI will continue to allow HTI to work longer hours and on weekends to complete the project. As stated in the bid documents, all work was to have been done from 7:00 AM to 5:30 PM, Monday through Friday. Effectively, HTI will gain time by working additional site hours without needing a further extension of completion date.

Item 5

HTI requested that additional funds be awarded to settle HTI's dispute with a local labor union (Local 150-Operating Engineers), because HTI believes the Group is benefiting from the non-union status of HTI. Union actions have caused disruptions in HTI's work and affected HTI's subcontractors. Due to this disruption, HTI is claiming delays under the Force Majeure clause in the contract.

HTI's request for additional funds and time was denied. MWCI has never represented that subcontractors at the site would not become union targets at the site, further more, HTI's responsibilities are not contingent on union actions. MWCI does not have the ultimate

control of outside interests in the project, including labor unions. We have worked with HTI to negotiate with the union. Costs savings or expenditures concerning HTI's union affiliation are not the responsibility of the Group. Reference is made to paragraph 19 of the Subcontract Agreement between the parties which states in part, "The subcontractor shall not employ personnel, means, materials or equipment which may cause strikes, work stoppages or any disturbances by workers employed by the Subcontractors...."

MWCI has established gates that restrict the target companies access to the site through one "dispute" gate. Non-target companies are prohibited from using the dispute gate and the pickets by the labor union(s) have moved to the dispute gate. Though not responsible for such actions, MWCI has taken such actions at its own expense to assist HTI with their performance.

Item 6

Standby charges for HTI were discussed at the meeting. MWCI, at this time, has not received any specific requests for standby charge approvals. However, based on verbal statements by HTI, we expect charges. At the meeting, MWCI stated that since the last time extension, we are not aware of any event at the site that would qualify as MWCI or the Group solely delaying the progress of HTI.

Item 7

HTI indicated through their February 6, 1997 memo that overdue payments were outstanding. HTI is also requesting all payments due to HTI be made within 10 days.

MWCI acknowledged that certain payments due to HTI have been delayed for various reasons. Because of HTI's request, future payments will be made as quickly as possible and coordination of billing cycles will now assist in getting payments to HTI. MWCI will also start to withhold the stated retainage amount allowed for in the contract terms. Payment of all outstanding balances will be made in accordance with the contract terms.

Sincerely,

MONTGOMERY WATSON CONSTRUCTORS, INC.

Todd Levis

Construction Manager

cc Phil Hall - MWCI

Joe Willich

Peter Vagt

Donald Justice

Greg Rawl

Mark Justice

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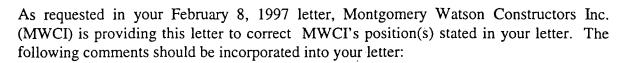


February 12, 1997

Mr. George "Andy" Powell Horizontal Technologies, Inc. 4767 Pine Island Rd., NW Matlacha, FL 33993

Subject: February 7, 1997 Meeting - ACS site

Dear Mr. Powell,



1. Claims for Additional Refuse Removal/Refill

- A. MWCI has indicated that HTI's bid did not limit refuse removal. The narrative depicting refuse removal was sufficient to relay the installation procedure for the proposed technology.
- B. The fact that Foster Wheeler inaccurately delineated the refuse area in the design documents has no bearing on who is responsible to remove the refuse. The documents submitted by Foster Wheeler were not intended nor represented to define the responsibilities of HTI regarding this issue. If Foster Wheeler had accurately reported the site conditions, delays associated with this work may have been avoided.
- C. Bidders for this project were not instructed to disregard the information provided by MWCI. Bidders were instructed to confirm the information relied upon for their bid, get the information needed to base their bid on, or inform MWCI of the assumptions made to generate their bid. HTI did not provide any such information in their bid.
- D. HTI has had over 7 months to investigate and evaluate refuse conditions at the site.

2. Claims for PPE Upgrade

A. MWCI believes that the PPE upgrade will have an impact on completion and costs.

3. Claims for Time Extensions

A. Previously granted time extensions have been granted to address issues before the February 7, 1997 meeting. The issues discussed during the February 7, 1997 meeting do not justify additional time extensions.

4. Impacts of Union Strikes/Force Majuere

- A. MWCI allowed open-shop competition and technology competition. Bids were evaluated on technical merit, cost and overall value.
- B. MWCI did not state a position about prior knowledge concerning possible labor conflicts.
- C. Force Majuere is not an irrelevant clause in the contract, however issues discussed during the meeting did not relate to it.

6. Overdue Payments Due HTI.

A. MWCI does not agree with any statements in this section.

Mr. Hall is involved with this project and is available to meet with Mr. Justice. Mr. Hall was on vacation last week.

Note that MWCI will be issuing a statement concerning the issues listed above. Additional information regarding MWCI's position on these topics is provided.

Sincerely

MONTGOMERY WATSON CONSTRUCTORS, INC.

Todd Lewis

Construction Manager

cc: Joe Willich
Joe Adams
Peter Vagt
Ben McGeachy

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CHEMICAL HAZARD EVALUATION/ AIR MONITORING STRATEGY

The following air quality parameters will be monitored during work activities:

- Oxygen Level
- Combustible Gases
- Hydrogen Sulfide
- Hydrogen Cyanide
- Vinyl Chloride
- Volatile Organic Compounds (VOCs)
- Other Compounds

MSDS equivalents for specific compounds noted above are included in Appendix B.

AIR MONITORING STRATEGY

Oxygen

A direct reading oxygen meter (Industrial Scientific) will be used to determine the percent of oxygen in the atmosphere.

Instrument Reading

Action to be Taken

<19.5% or >23.5%

Cease operations and move to a safe area. Re-evaluate the work plan. Engineering controls such as forced ventilation and use of non-sparking tools are to be implemented if operations are to continue. DO NOT CONTINUE WORKING UNTIL OXYGEN LEVELS ARE BETWEEN 19.5 AND 23.5%. When oxygen levels are outside this range, combustible gas meter readings are not reliable.

Combustible Gases

Action levels are based on the readings of a Industrial Scientific combustible gas meter. The readings are generally given as a percentage of the lower explosion limit (% LEL).

Instrument Reading

Action to be Taken

0 to 10% LEL

Continue working and monitoring the atmosphere for combustible gases. Inform personnel working in the area whenever readings are >5% LEL.

10 to 20% LEL

Continue working with caution. Inform personnel working in the area of the readings. Be prepared to cease operations.

> 20% LEL

Cease operations and move to a safe area. Re-evaluate the work plan. Engineering controls such as forced ventilation and use of non-sparking tools are to be implemented if operations are to continue. DO NOT CONTINUE WORKING UNTIL CONDITIONS ARE CONSISTENTLY BELOW 20% LEL.

NOTE

When oxygen levels are above 23.5% or below 19.5%, combustible gas meter readings are not reliable.

Hydrogen Sulfide (H₂S)

A direct reading H_2S meter (Industrial Scientific) will be used to determine H_2S levels. Whenever the alarm sounds on the H_2S meter, cease work immediately and contact the SSO or HSM. For H_2S the TLV is 10 PPM, and the alarm is set for 10 PPM.

If approval is given by the SSO or HSM, verification of the presence of H_2S is to be made using colorimetric tubes which can detect H_2S . The person taking the sample is to wear appropriate respiratory protection. There is no air-purifying cartridge approved for use in an atmosphere containing H_2S . A supplied-air respirator must be used.

If the present of H_2S is confirmed, cease activities and contact the HSM. If the colorimetric tubes do not indicate the presence of H_2S , continue with site activities cautiously and continue to monitor for H_2S with the direct reading meter. Hydrogen sulfide is an olfactory depressant and therefore, the sense of smell cannot be relied upon.

Hydrogen Cyanide (HCN)

A direct reading HCN meter (Monitox) will be used to determine HCN levels. Whenever there is <u>any</u> positive reading on the HCN meter, cease work immediately and contact the Site Safety Officer (SSO) or Health and Safety Manager (HSM). The TLV-C (ceiling) for HCN is 4.7 PPM, and the alarm is set for 4 PPM.

If approval is given by the SSO or HSM, verification of the presence of HCN is to be made using colorimetric tubes which can detect HCN. The person taking the sample is to wear appropriate respiratory protection. There is no air-purifying cartridge approved for use in an atmosphere containing HCN. A supplied-air respiratory must be used.

If the presence of HCN is confirmed, cease activities and contact the HSM. If the colorimetric tubes do not indicate the presence of HCN, continue with site activities cautiously and continue to monitor for HCN with the direct reading meter.

Vinyl Chloride

Whenever any reading above background is noted with the organic vapor monitor, colorimetric tubes will be used continually during intrusive activities to verify the presence of vinyl chloride. If vinyl chloride is found to be present above 1 ppm, personnel will cease operations and contact the Health and Safety Manager. There is no air-purifying cartridge approved for use in an atmosphere containing vinyl chloride. A supplied-air respirator must be used.

Volatile Organic Compounds (VOCS)

Photoionization meter (Thermo Environmental or HNu) with a lamp rating of 11.7 eV

Action Levels:

< Background: Level D or D-Modified*

< 5 Instrument Units above background: Level C

5 to 50 Instrument Units above background: Level B

- \geq 50 Instrument Units above background: Cease operations and move to a safe area. Contact the Health and Safety Manager and re-evaluate the work plan.
- Level D is to be used when there is no dermal contact with contaminated materials. Level D-Modified is to be used when there is dermal contact with contaminated materials.

Dust

A dust control program will be used to limit contaminant dispersion. Prevailing winds are generally westerly, but stakes with flagging will be used to determine wind direction and aid in dust control measures.

Dust may be generated during the following activities.

- Movement of vehicles on unpaved roads.
- Movement of soils by bulldozers, backhoes, and front end loaders.
- Wind erosion from stockpiled soils

Dust control measures will be implemented during construction activities on site. Specific dust control measures will be chosen by the subcontractor performing the work and may include the following:

- Compacting unpaved roads as much as possible.
- Watering the roads with a water wagon or spray bar. Materials sprayed may include plain water, salt solutions, surfactants, and/or adhesives.
- Speed control of vehicles using the road.

- Control of emissions from movement of soil by bulldozers, front end loaders, and backhoes (with such a high water table most soil excavated will be very moist and additional measures are not likely necessary).
- Control emissions from soil stockpiles by covering the soil pile or erecting a wind screen, and/or spray the pile with water or chemical dust suppressants to compact and weight soil particles.

If visible dusty conditions persist after dust control measures are implemented, the SSO will initiate and upgrade to Level C protection.

FREQUENCY

Perform air monitoring whenever any of the following situations arise:

- Upon initial entry to a site to rule out IDLH conditions
- Work begins at a different portion of the site
- · New contaminants are noted
- -A new/different phase of work is started
- Work is being performed in areas with obvious liquid contamination
- Continuously during intrusive activities
- Continuously during confined space entry

Monitoring should be performed on personnel with the highest potential exposure. If samples are being collected in jars, use monitoring equipment to determine the level of contaminants in the breathing zone of the person collecting the samples. Do not use instantaneous readings to determine the level of protection. Readings should be persistent unless "pulses" of vapor exceed STEL or Ceiling levels. Monitoring should also be performed at the source of chemical hazards such as boreholes and the surface of contaminated materials but upgrades are based on breathing zone concentrations.

CALIBRATION REQUIREMENTS

Calibrate all monitoring equipment at the beginning and end of each work day.

Calibration data will be recorded in a bound field notebook or in the field notes. Documentation should include:

- Date/time
- Zero reading before calibration
- Concentration of calibration gas
- Reading obtained with calibration gas before adjusting span
- Final reading obtained with calibration gas after adjusting span

e Safety Plan

When air monitoring is required, take area air samples at the following locations daily, in addition to any other air monitoring required by this plan. Record time, location and results of monitoring and actions taken based upon the readings:

- Upwind of work areas to establish background air contaminants
- In Support Zone to check for contamination
- Along decontamination line to check that decontamination workers are properly protected and on-site workers are not removing protective equipment in a contaminated area
- Exclusion Zone to verify level of protection and Exclusion Zone boundaries
- · Downwind of work area to track any contaminants leaving site

Use the SOPs for equipment calibration in the Montgomery Watson Instrument SOP Manual. Manufacturer's information regarding each piece of air monitoring equipment utilized at the site is presented in Appendix K.

REQUIRED PERSONAL PROTECTIVE EQUIPMENT

Level D

Level D is to be worn during activities which do not suggest any initial respiratory or dermal health hazards. The following list outlines the personal protective equipment to be utilized for Level D.

- Work Uniform
- Safety Boots Steel toe/steel shank
- Hard Hat
- Safety Glasses with side shields*
- Face Shield*
- Hearing Protection*

Site Safety Plan

Level D-Modified

Level D-Modified is to be worn during activities which do not suggest any respiratory hazards, but where dermal protection is warranted.

- Safety Boots Steel toe/steel shank
- Hard Hat
- Safety Glasses with side shields*
- Face Shield*
- Hearing Protection*
- Outer Gloves MOC: Neoprene or Nitrile
- Boot Covers MOC:Latex
- Chemical Resistant Clothing MOC:Polyethylene-coated Tyvek
- Inner Gloves MOC:Nitrile

Level C

Level C should be worn where the criteria for using air-purifying respirators are met, and a higher level of dermal protection is needed. Criteria for using an air purifying respirator include chemicals with good warning properties, oxygen between 19.5 and 23.5% and a chemical cartridge must be available for chemicals in question.

- · Safety Boots Steel toe/steel shank
- Hard Hat
- Face Shield*
- Hearing Protection*
- Outer Gloves MOC: Neoprene or Nitrile
- Boot Covers MOC:Latex
- Chemical Resistant Clothing MOC:Hooded, Polyethylene-coated Tyvek
- Full-Face Air Purifying Respirator
- Respirator Cartridge Type:organic vapor/acid gas
- Inner Gloves MOC:Nitrile

Level B

Level B is worn where the highest level of respirating protection is needed and a higher level of dermal protection is required. Level B is the primary level of choice in unknown environments.

- · Safety Boots Steel toe/steel shank
- · Hard Hat
- · Face Shield*
- Hearing Protection*
- Outer Gloves MOC: Neoprene or Nitrile
- Boot Covers MOC:Latex
- Chemical Resistant Clothing MOC:Hooded, Polyethylene-coated Tyvek
- Positive Pressure/Pressure Demand Self Contained Breathing Apparatus or Airline Respirator with Escape Bottle
- Inner Gloves MOC:Nitrile

Safety Plan

* Optional PPE - Use as needed.

Respirators will be used following proceedures in Appendix N - Respiratory Protection Equipment.

Note: Safety glasses are required within 50 ft of operating equipment, tools or machinery. Face shields are required during operations that may cause materials to fly into or spray the face. These include:

- · Sawing metal or concrete
- Grinding or sanding operations
- In the vicinity of drilling operations when mud and liquids are sprayed in the work area
- When opening drums or tanks when hazardous materials under pressure are potentially present
- · Cutting with a torch or when welding

TASK SPECIFIC LEVELS OF PROTECTION

Monitoring Well Installation/Soil Sampling/Sediment Sampling/Soil Borings Potential Hazards: VOCs, severe weather, temperature stress, heavy equipment, biological hazards, utilities, and noise.

Hazard Evaluation: Low to moderate.

Principle Route of Chemical Exposure: Dermal contact and inhalation.

Level of Protection: For monitoring well installation, surface water and sediment sampling, Level D health and safety protection has been used in past activities and is anticipated to be applicable to these tasks, since this work is performed outside the limits of waste. For soil borings advanced near the waste area on-site and offsite, Level D-Modified has been applicable in past investigations. If air monitoring indicates the presence of VOCs above background, upgrade to Level C protection will be performed. Field personnel will be able to modify to Level B protection if air monitoring indicates this to be necessary.

Air Monitoring: Continually during drilling (intrusive) activities for Organic vapors, vinyl chloride, oxygen, explosive vapors, vinyl chloride, hydrogen sulfide, hydrogen cyanide in fill areas. Organic vapors and vinyl chloride only outside fill area.

Groundwater Sampling/Groundwater Elevation Measurement/Surface Water Sampling

Potential Hazards: VOCs, severe weather, temperature stress, and biological hazards.

Hazard Evaluation: Low

Principle Route of Chemical Exposure: Dermal contact and inhalation.

Level of Protection: For these tasks, Level D protection has been used in the past and is applicable. Monitoring wells which have shown considerable contamination in the past will be performed in Level D modified protection.

Air Monitoring: During the initial opening of each monitoring well for organic vapors, VOCs

Geoprobe Sampling

Potential Hazards: Explosive vapors, VOCs, hydrogen sulfide, hydrogen cyanide, severe weather, temperature stress, heavy equipment, biological hazards, utilities, and noise.

Hazard Evaluation: Low to moderate.

Principle Route of Chemical Exposure: Inhalation, dermal contact.

Level of Protection: Geoprobe sampling will be performed outside the site boundary limits where groundwater results have shown minimal, if any, groundwater impact. This work will be performed in Level D protection. If field screening (PID readings) or visual observations indicate potential contamination, field personnel will upgrade to Level D-modified.

Air Monitoring: During intrusive activities for Oxygen, explosive vapors, organic vapors, vinyl chloride, hydrogen sulfide, hydrogen cyanide in fill areas. Organic vapors and vinyl chloride only outside fill area.

Drum Consolidation/Waste Sampling

Potential Hazards: Explosive vapors, VOCs, hydrogen sulfide, hydrogen cyanide, severe weather, temperature stress, heavy equipment, biological hazards, noise.

Hazard Evaluation: Moderate to high.

Principle Route of Chemical Exposure: Dermal contact and inhalation.

Level of Protection: Drum excavation and waste sampling have been performed in Level C protection on past occasions. If air monitoring indicates an upgrade is necessary to Level B protection, job activities will be ceased, and upgrade to

proper health and safety protection will be performed.

Air Monitoring: During drum opening and sampling activities for Oxygen, explosive vapors, organic vapors, vinyl chloride, hydrogen sulfide, hydrogen cyanide.

Special Work Practices: See Appendix O.

Elevation and Location Survey

Potential hazards: Severe weather, temperature stress and biological hazards.

Hazard Evaluation: Low

Principle Route of Chemical Exposure: Dermal contact.

Level of Protection: Elevation and location surveys at the ACS facility have been performed in Level D protection in the past and is applicable for this activity.

Air Monitoring: None required.

PERSONAL DECONTAMINATION

Use the SOP for Decontamination at the highest level of protection used on Site each day, found in Appendix G.

Site Safety Plan

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FROM : MONTGOMERY WATSON

630 691 5133

CHANGE ORDER

Document No.	022197.cs1	Owner	ACS RD/RA Com.		
Change Order No.	5	Orig. Contract Amt. \$	\$915,379.00	Days	154
Contract Name	ACS	Prev. Appyd. Changes \$	\$475,578.50	Days	100
Contract No.		This Change \$	\$40,000.00	Days	0
Subcontractor	нП	Revised Contract Amt. \$	\$1,430,957.50	Days	254*

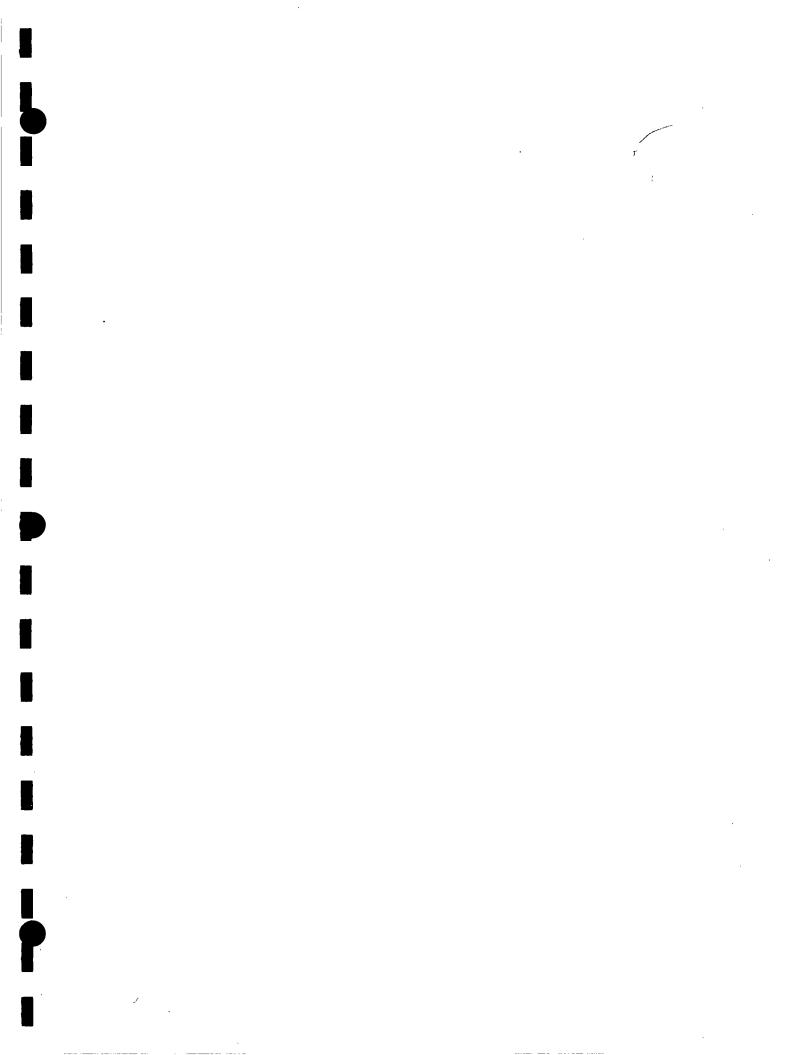
This Change Order covers changes to the subject contract as described herein. The Subcontractor shall construct, furnish equipment and materials, and perform all work as necessary or required to complete the Change Order Items for a lump sum price agreed upon between the Subcontractor and Montgomery Watson Constructors, Inc.

Description of Changes	Increase in Contract Amount	(Decrease) in Contract	Contract Time Extension
	(\$)	Amount (\$)	(days)
HTI to employ union operators to satisfy the demands of Local No. 150. MWCI will pay HTI \$4,000.00 per week for 10 weeks, for a total not to exceed \$40,000.00. The 10 week period is based on the schedule provided by HTI for completion of the barrier wall and the BWES trenches. The 10 week period shall commence on March 1, 1997. If HTI fails to satisfy the demands of Local No. 150 and Local No. 150 resumes picketing at the site, only the weeks HTI actually employed Local No. 150 members will be paid for. If HTI completes the project successfully, in less than 10 weeks, the total amount will be paid. If HTI falls to complete the barrier wall and BWES trenches within the 10 weeks, HTI shall continue to satisfy the demands of Local 150 at no addition cost to MWCI. Claims for additional cost and time delays are not waived by accepting this Change Order.	\$40,000.00		0
Totals	\$40,000.00		0
Net change in contract amount (increase)	\$40,000.00		

The amount of the contract will be increased by the sum of \$40,000.00 and the contract time shall be extended by 0 calendar days (* the completion date based on the contract time is February 28, 1997). The undersigned Subcontractor approves the foregoing Change Order as to the changes, if any, in the contract price specified for each item including any and all supervision costs and other miscellaneous costs relating to the change in work, and as to the extension of time allowed, if any, for completion of the entire work on account of said Change Order. The Subcontractor agrees to furnish all labor and materials and perform all other necessary work required to complete the Change Order items. This document will become a supplement of the contract and all provisions will apply hereto. It is understood that the Change Order shall be effective when approved by the Owner.

Recommended.	Signature/Date - Construction Manager
Accepted:	Signature/Date - Subcontractor
Approved:	Signature/Date - MWCI Director

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CHANGE ORDER

Document No.	35562.cm2	Owner	ACS RD/RA Com.	_	
hange Order No.	7	Orig. Contract Amt. \$	\$915,379.00	Days	
Contract Name	ACS	Prev. Appvd. Changes \$	\$537,128.50	Days	
Contract No.		This Change \$	\$156,888.04	Days	21
ubcontractor	HTI	Revised Contract Amt. \$	\$1,609,395.54	Days	

This Change Order covers changes to the subject contract as described herein. The Subcontractor shall construct, furnish equipment and materials, and perform all work as necessary or required to complete the change Order Items for a lump sum price agreed upon between the Subcontractor and Montgomery Watson Constructors, Inc.

Description of Changes	Increase in Contract Amount (\$)	(Decrease) in Contract Amount (\$)	Contract Time Extension (days)
Relocate barrier wall north of the current alignment (as shown on the attached Figure). Work shall include incorporating the new alignment into the design documents and completion of the new alignment utilizing the design documents prepared by Foster Wheeler. The amount of this authorization includes the portion of the barrier wall previously completed that will be replaced using the new alignment. The amount of this authorization also includes removal of naturally occurring materials or obstacles necessary to complete the new alignment of the barrier wall. In the new alignment, removal of Non-naturally occurring obstacles are not the responsibility of HTI. A description of the work is included in HTI's proposal dated May 8, 1997. Attached is a map indicating the new location of the barrier wall dated May 12, 1997.	\$156,888.04		0
Totals	\$156,888.04		0
Net change in contract amount (increase)	\$156,888.04		

orizontal Technologies

February 28, 1997

Change Order #5

The amount of the contract will be increased by the sum of \$156,888.04 and an additional 21 days will be)dded to the current contract completion date. (* the completion date based on the current contract time is February 28, 1997). The undersigned Subcontractor approves the foregoing Change Order as to the changes, if any, in the contract price specified for each item including any and all supervision costs and other miscellaneous costs relating to the change in work, and as to the extension of time allowed, if any, for completion of the entire work on account of said Change Order. The Subcontractor agrees to furnish all labor and materials and perform all other necessary work required to complete the Change Order items. This document will become a supplement of the contract and all provisions will apply hereto. It is understood that the Change Order shall be effective when approved by the Owner.

Recommended:

Signature/Date - Construction Manager

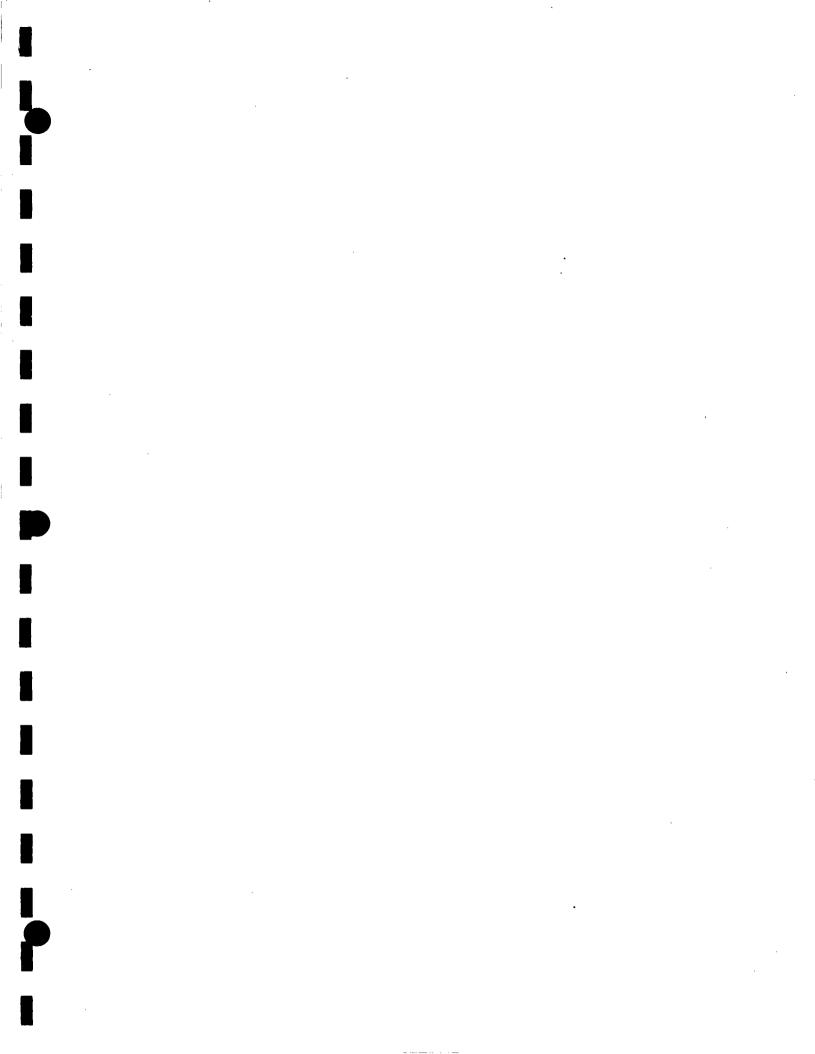
Accepted:

Signature/Date - Subcontractor

Approved:

Signature/Date - MWCI Director

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SENT BY: U.S. EPA

MONTGOMERY WATSON

June 20, 1997

Ms. Sheri Bianchin, RPM Mail Code SR-J6 U.S. EPA, Region V 77 West Jackson Blvd. Chicago, IL 60604-3590

Re: Mitigation Measures Schedule
Barrier Wall Construction
American Chemical Service NPL Site, Griffith, Indiana

Dear Ms. Bianchin:

We are in receipt of your letter dated June 11, 1997, conditionally approving a time extension through July 11, 1997 for completion of the barrier wall at the American Chemical Service, Inc. Site (ACS Site). We remain committed to completing the barrier wall and will continue to make every reasonable effort to see that the wall is completed by July 11th. As required by the letter, we are hereby submitting the Mitigation Measures Schedule (MMS).

As explained in previous letters, the installation of both a slurry wall and high density polyethylene wall (poly wall) in the same excavation is an innovative technology. While HTI has installed poly walls at other sites, this is the first time the poly wall has been installed to a depth greater than 20 feet. On the west and north side of the alignment, where depth to the top of clay was 20 feet or less, HTT's progress was very efficient when they used Trencher Number 6 which had been used previously at other Sites. Since the top of clay depth was greater than 20 feet along the west alignment of the ACS barrier wall, HTI designed and built Trencher Number 7 specifically for this job. As we have acknowledged, the work appears to be inefficient using Trencher Number 7 because difficulties can present new challenges that have not been solved before, and require defining both the problem and the fix for the first time. This learning curve has been steeper than originally expected, but it is nonetheless understandable. Furthermore, productivity cannot be increased simply by bringing more equipment and manpower to the Site. Trencher Number 7 is a unique, one of a kind machine. There is not another such machine in the country that can do what this machine can do. It would take several months and cost several hundred thousand dollars to construct another machine suited for the work.

Actions Previously Taken to Mitigate the Effects of Delays

Montgomery Watson has taken actions and required HTI to take actions to minimize delays and mitigate the effects of delays that have already occurred. These actions include:

 When we first saw that HTI's progress was slower than expected, Montgomery Watson Constructor Inc.'s President, Phil Hall, met with HTI's President, Don Justice, and requested that he take over personal management of the project, at the ACS Site. As a result, Mr. Justice has been at the Site, averaging more than 40 SENT BY:U.S. EPA

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hours per week, overseeing repairs of the equipment and barrier wall construction activities since February, 1997.

- Except for a four-day Easter Holiday and the Memorial Day weekend, HTI has
 maintained the construction crew on Site full-time, including weekends, to
 proceed with poly wall deployment whenever possible. The only interruption to
 barrier wall deployment has been downtime for repairs of Trencher Number 7 and
 other essential unique equipment.
- During construction, HTI encountered municipal refuse, construction debris and buried drums along the barrier wall alignment at locations previously unknown to contain these materials. Montgomery Watson conducted a test pitting program along the remainder of the barrier wall alignment to further define the location of such obstructing materials. As a result, a zone of buried construction debris was discovered along the cast leg of the alignment inside the ACS facility. With this carly warning, the debris was removed and HTI's progress was not hindered or delayed when installing the slurry wall in that area.
- In order to minimize joint failures, the construction method was changed to a
 two-pass sequence, first installing the bentonite slurry wall and then installing the
 poly wall.
- When an area of buried drums was encountered along the north leg of the barrier wall alignment, Montgomery Watson expanded the barrier wall to encompass the drums so that installation could proceed while the Buried Drum Removal Plan was developed.
- Montgomery Watson required ITII to re-mobilize an additional trencher, Number 6, to install poly wall during repairs to Trencher Number 7. Trencher Number 6 showed high efficiency in the areas it could be used, where the barrier wall is less than 20 feet deep.
- HTI brought in a nationally known expert on poly wall construction to help them
 design a fix to the gaps that have been left in the poly wall portion of the barrier
 wall.
- Montgomery Watson has continued to require HTI to provide explanations for any equipment failures, and then observed the repairs, demanding that they be made as quickly as possible to minimize the delays in completing the barrier wall construction.
- Montgomery Watson has encouraged the ACS facility personnel to be flexible to limit the delays to HTI that will result from taking the railroad tracks out of service while HTI crosses from station 1+00 to station 42+00.

The status of the 4,550 foot barrier wall as of June 18th, was: 3,850 feet of installed slurry wall and poly wall, 650 feet of installed slurry wall, and 50 feet with neither slurry nor poly wall installed. In addition, there are eight locations along the barrier wall alignment where the HDPE panel had not been adequately closed (poly wall gaps), due to the construction

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difficulties described in our April 22nd and June 12th, 1997 letters. Figure 1 shows the approximate locations of the eight poly wall gaps. As of June 19th, the gap at station 20+00 had been successfully closed.

New Actions to Mitigate the Effects of Delays

On Monday, June 16th, we met with HTI to develop a detailed schedule to complete installation of the poly wall and to complete closure of the eight gaps. HTI has committed to work every day through July 11th if necessary, with the exception of the July 4th holiday. HTI is using it's own highly specialized work crew and has supplemented the work force, where possible, with local union employees, to maximize the available man-hours. The working hours will be from dawn to dusk. We cannot work specialized crews around-the-clock or 24 hours a day because of the increased health and safety risks. Because this is an innovative technology, there are not other trained crews that would permit scheduling two working shifts.

It is important to note that the history of the site does not allow us to predict a schedule with any certainty. For example, on some days, the trencher has been able to install more than 300 feet. At other times, it has not been possible to install any poly wall for more than a week. We can commit to continuing work and making the best progress possible, but we cannot guarantee a schedule for completion. Table 1 shows the best case schedule for installing the last 700 feet of poly wall and concurrently closing the gaps.

Please call me if I can provide any further information regarding the challenges in completing the barrier wall or about the daily progress toward completion.

Sincerely,

MONTGOMERY WATSON INC.

Joseph D. Adams Jr., P.E,

Project Coordinator

Enclosures: Table 1. Mitigation Measures Schedule

Figure 1. Approximate Poly Wall Gap Locations

cc: C. Brown, IDEM

S. Mrkvika, B&V

ACS Technical Committee

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Table 1

Barrier Wall Construction Activities American Chemical Service NPL Site Griffith, Indiana

Mitigation Measures Schedule

Day	Date	Poly wall	Gap Closure	
Monday	June 16			
Tuesday	June 17			
Wednesday	June 18		Close Breach #1	
Thursday	June 19	Install with No. 7		
Friday	June 20	Install with No. 7		
Saturday	June 21	Install with No. 7		
Sunday	June 22	Install with No. 7		
Monday	June 23	Install with No. 7		
Tucsday	June 24	Install with No. 7	Close Gap #2	
Wednesday	June 25	Install with No. 7	Close Gap #3	
Thursday	June 26	Install with No. 7	Close Gap #4	
Friday	June 27	Install with No. 7	Close Gap #4	
Saturday	June 28	Install with No. 7	Close Gap #5	
Sunday	June 29	Install with No. 7	Close Gap #5	
Monday	June 30	Install with No. 7	Close Gap #6	
Tuesday	July 1	Install with No. 7	Close Gap #6	
Wednesday	July 2	Install with No. 7	Close Gap #7	
Thursday	July 3		Close Gap #7	
Friday	July 4		Holiday	
Saturday	July 5	Contingency Time	Close Gap #8	
Sunday	July 6]	Close Gap #8	
Monday	July 7		Close Gap #8	
Tuesday	July 8			
Wednesday	July 9			
Thursday	July 10			
Friday	July 11	Complete	Polywali	

Note:

[&]quot;No. 7" is the trenching equipment specifically built for this Site.

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